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OIL and GAS ENGINEERING

FOR OIL AND GAS PRODUCTION AND PIPE LINE DIVISIONS

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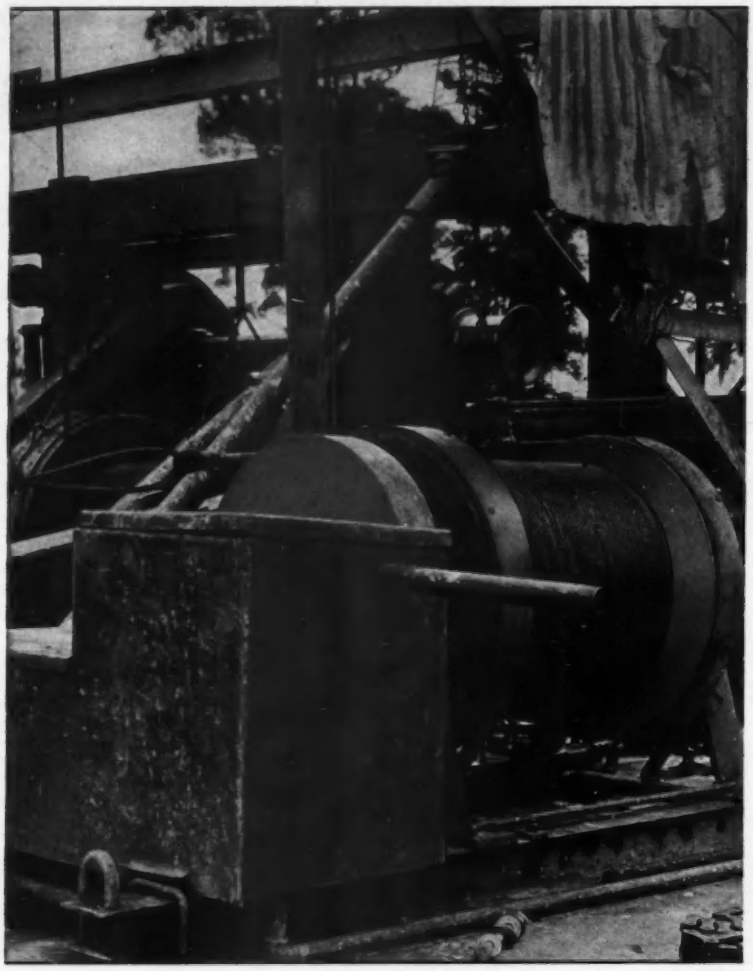

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Editor

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VOLUME 67, No. 11 NOVEMBER 28, 1932

THE OIL WEEKLY

FOR OIL AND GAS PRODUCTION AND
PIPE LINE DIVISIONS

ENGINEERING • NEWS • STATISTICS

The Changing Panorama

Reports received by the American Petroleum Institute from refining companies controlling 93.2 per cent of the 3,856,300-barrel estimated daily potential refining capacity of the United States, indicate that 2,103,000 barrels of crude oil daily were run to the stills operated by those companies, and that they had in storage at refineries at the end of the week, 30,841,000 barrels of gasoline and 133,346,000 barrels of gas and fuel oil. Gasoline at bulk terminals amounted to 11,258,000 barrels and 1,525,000 barrels were in water borne transit in or between districts.

Cracked gasoline production by companies owning 95.4 per cent of the potential charging capacity of all cracking units, averaged 436,000 barrels daily during the week. Page 21.

Going Deep in the Coast

Further reasons why the area adjacent to the Gulf Coast of Texas and Louisiana is attracting operators looking to future supplies, are revealed in a survey which shows that this area has 34 fields from which production is obtained below 5000 feet. Most of these deep producers are around domes from which shallower oil has been taken for a number of years, and experiences of deeper producers which have been in operation sufficient time to prove their worth indicates that the effort for deep oil in this region is well worthwhile. Recognized as the most prolific reserve now in sight the Gulf Coast is an area on which data is not only of current interest but valuable for filing. Page 24.

One of the first problems confronting Judge C. B Ames as the new president of the American Petroleum Institute is attaining a uniform price for crude oil in the Mid-Continent. With some of the major purchasers paying more than is paid by those representing a large part of the buying demand of the industry who failed to meet the late price increase which was in a measure a reward offered to producers for cooperation in curtailing production, a condition exists that cannot last. In fact it is unusual that the difference in postings could have existed for

ARGENTINE GOVERNMENT TANKER

Seven of these tankers comprise the fleet of the government, four of which are used to move crude between Comodoro Rivadavia and La Plata, making the one-way trip in slightly less than 100 hours. The above ship was photographed while taking on a cargo at Comodoro Rivadavia.

as many days as it has, and the one reason apparent that the price has not been made uniform at the lower level is that those who raised it did so in the hope that this action would have an effect in holding proration in line. Heretofore the influence of the Institute has been to encourage holding back production, and while a better price has not been promised in that connection it at least was implied. Refusal of the purchasers holding to the lower price to advance are based on arguments as convincing as are the arguments of those who saw fit to increase, which brings about a dead lock under which losses of the buyers are kept even: what the higher bracket buyers are losing in giving more than their competitors are paying is balanced by the other crowd's loss in standing in the community.

Over the week end East Texas gets a new deal on proration—but a new scheme of proration is no novelty in that area which in a brief existence has had all kinds of control, and while rated the world's greatest oil field, the output of strife and litigation has about kept pace with the potential of oil. It is to be anticipated that the new order will be followed immediately by a new round of court actions.

Page 8.

The Oil Man's Calendar

DECEMBER

5-9 *American Society of Mechanical Engineers, New York, N. Y.*

6-8 *Nebraska Petroleum Marketers, Omaha, Nebraska.*

9 *Independent Petroleum Association of Texas, Fort Worth, Texas.*

? *Rocky Mountain Oil and Gas Association, Great Falls, Montana, Rainbow Hotel.*

JANUARY

9-10 *Northwestern Petroleum Association, North Dakota Division, Annual Convention, Fargo, North Dakota, Waldorf Hotel.*

12-13 *Northwest Petroleum Association, Minnesota Division, Annual Convention, St. Paul, Minnesota, Lowry Hotel.*

FEBRUARY

15-17 *Ohio Petroleum Marketers Association, Columbus, Ohio.*

MARCH

23-25 *American Association of Petroleum Geologists, Houston, Texas.*

APRIL

13-15 *Petroleum Industry Electrical Association, Tulsa, Oklahoma.*

17-23 *Oil Equipment & Engineering Exposition, Dallas, Texas.*

20-21 *National Petroleum Association, Cleveland, Ohio, Cleveland Hotel.*

Kettleman Hills

Kettleman Hills in California will long remain among the most interesting oil fields in the world. Its development has involved much that is spectacular and negotiations of the United States to bring about orderly development there has kept the field in the public eye. Natural conditions which have been met and overcome have attracted interest of the engineering profession because of the special consideration required and equipment ideas developed as the drilling progressed. An account of development in this field is practically a cross section of oil field engineering progress during that period. Page 33.

Refiners Must Build

Despite lowered demand for petroleum products and the fact that already the "rated" capacity of oil refineries in the United States is far in excess of requirements, refineries must continue to build and improve. Older equipment becomes obsolete through three influences—the fact that nothing is permanent and particularly so under the strenuous conditions under which stills operate; the question of economical production; and a change in specifications which demands that gasoline shall have characteristics impossible to obtain with the older equipment. Consequently they must keep on spending money on improvements to stay in business.

Page 10.

Cleaning out an oil well is nothing particularly to be noticed, but a job of that kind in Oklahoma is interesting—the well is still a producer after initiating Oklahoma production 35 years ago, and it has not been cleaned out in 25 years. Page 12.

Gas Loses

For the first time in a decade natural gas took a backward step in 1931. Marketable production for that year was 13 per cent below 1930. Lessened oil well drilling in areas where natural gas is the choice fuel, as well as lower demand for carbon black purposes were the foremost causes of the decline. Domestic use came in with an advance of 1.2 per cent for 1931 against 1930. Page 14.

Rumors *That Humble Will* Resume Full Payment *Soon*

Tyler, Texas.—Resumption of full payment on all oil accepted is expected to be announced on or about December 1 by Humble Oil & Refining Company, according to reports here, after having enforced a part payment and storage plan on all outside connections in the East Texas field and the Panhandle, North Texas and a portion of West Central Texas since September 12, 1932. This abbreviated buying policy coupled with the fact that the company failed to advance its price postings along with the majority of the major purchasing companies on October 15 has resulted in the officials and employes of the company being made targets for severe criticism from all sides.

In connection with this return to a full payment plan it is reported that Humble Oil & Refining Company will probably nominate to accept and purchase less crude than has been taken heretofore from outside connections in a number of fields.

Oil accepted from outside connections by Humble Oil & Refining Company in the above areas between September 12 and 16 has been paid for to the extent of 50 per cent, with the remainder going to Humble Pipe Line Company's storage at two cents per barrel monthly, plus 10 cents per barrel gathering charge. Since September 16 the company has been paying for 60 per cent, and storing the remainder under the same conditions. Invoices demanding cash payment for storage and pipe line gathering services rendered were sent to producers after the elapse of the first month.

The submission of these bills caused many of the producers to become indignant under the circumstances, as payment of same automatically reduced the value of a barrel of storage oil after the elapse of 30 days by 12 cents, with two cents more to come off each succeeding 30-day period.

Other major purchasers — Stanolind Crude Oil Purchasing Company, Illinois Pipe Line Company (Mid-Kansas Oil & Gas Company), Atlantic Oil Producing Company and Tidal Refining Company—are adhering to the lower price schedule, but none followed Humble Oil & Refining Company in withholding payment on a portion of the oil accepted.

Three Major Prospects

As the week closes there are three prospects in Texas for new and major oil producing districts. Each of the prospects give indications of proving for commercial production and each if successful will add an additional producing field to the already over-burdened column of potential production in Texas.

The three promising prospects of the week are:

The Buffalo Structure of Leon County, East Texas. **(See story on page 46.)**

The Ector County Wildcat of Harrison Et Al, West Texas. **(See story on page 44.)**

The Pledger Prospect, Brazoria County, Gulf Coast. **(See story on page 52.)**

Big Increase Slated On Oil Workers Rate

Dallas, Texas.—Workmen's compensation insurance rates for nearly all branches of the oil industry in Texas are slated to be greatly increased effective December 1, 1932, unless sufficient protest is registered at a rehearing authorized to be held here on the morning of November 29 at the Adolphus Hotel by the State Insurance Commission. The higher rates were authorized by the commission as a result of a hearing held October 13 at Austin in response to a petition filed by insurance companies, and only a few of the oil companies had sufficient notice to appear and present their side of the case. The North Texas Oil & Gas Association and the Texas Oil & Gas Conservation Association were instrumental in the case being re-opened by the commission.

The new rates slated to go into effect after this month will represent an increase of $2.88 in the rate covering compensation insurance on rig builders, while workmen on drilling rigs and other development departments will be advanced $2.30, making the rate $12.85 per $100 pay roll. The schedule for workmen in the oil and gas producing division advances 47 cents, while geologists and scouts, who apparently have been good risks, are decreased 28 cents. Office clerks will continue at a low rate of eight cents per $100, while the refining division is confronted with a hike of 56 cents.

Unless the proposed new rates are altered somewhat many drilling contractors will be forced to obtain more for well contracts, or slash payrolls in order to absorb the excessive compensation insurance. The basis of the protest against the pending rates will be largely on the fact that insurance companies are claiming need for higher rates when they have failed to lower their operating costs, and that their position is not altogether due to settlement of claims.

A comparison of the current and proposed new rates follows:

		Present Rate	Effective 12-1-32
1321	Oil or gas producing.....	4.42	4.89
6202	Oil wells—development ..	10.55	12.85
8605	Geologists and scouts.....	1.34	1.06
4740	Oil refining	2.58	3.14
8810	Clerical—office	.08	.08
6209	Rig builders	11.84	14.72

Expect Decision in Whitesides Case

Austin, Texas.—Arguments in the Whiteside and other suits involving title to the Yates oil field in Pecos County were heard by the Supreme Court of Texas during the first three days of the past week, and it is expected that a final decision will be handed down by that body before the first of the year.

The cases are those of Douglas Oil Company against the State, growing out of the old Whiteside case; The California Company cases, and Permian Company vs. W. A. Smith. They were added to the court's docket already containing the Smith vs. Turner cases.

Part of the wealth involved is over $50,000,000 already impounded in treasuries of major oil companies for previous production, whose ownership is to be determined by the court decision.

Following the use of "checkerboards" in the 12-week trial here of The California Company case before District Judge J. D. Moore, huge blackboard maps were placed before the supreme court, and attorneys, arguing the case, held a long baton in order to point out visually the intricacies of lines and blocks.

The cases hinge in a decision on which set of old surveys shall be accepted, thus determining whether a strip of vacancy land will be located to the east or west of Block 194 in Pecos County. Title to two sets of claimants throughout the area is involved.

There are three main theories governing location of the excess lands.

1. The Turner theory, based on lines from Block Z, as the basis of the L. W. Durrell survey.

2. The Douglas-Whiteside theory, based on the idea that the river surveys shall be acknowledged, wherever they may lie.

3. That the excess is to be computed on a theory of locating a point in the Dodd survey at the southeast corner of Block 7, C-3.

East Texas Proration—*What Can Be Expected* Under Demand Law?

JACK LOGAN
Staff Representative

NEW proration orders for the East Texas field are expected this week following a state-wide hearing held at Austin November 26 (Saturday) by the Texas Railroad Commission, and that area will then enter a new epoch of its relatively short but momentous history.

Behind it will lie the broken remains of two separate oil conservation laws, adroitly designed and carefully worded, but incapable of withstanding the severe tests imposed by the big pool, with its many operators, large and small, actuated by as many ideas and motives.

Ahead will be the form of another conservation law, set up as a further effort to hold back the world's most prolific field—a new law, designed as a possible means for doing what two other laws had failed to do.

Meanwhile observers look on and wonder: Will the newly devised impediment to unrestrained production suffer the same futile fate as the other two which were ground down by the inexorable giant of oil fields? Or will it prove an effective device, built more durably and substantially in the light of greater experience, although by the minds and hands which had done the designing before?

What the strength of the new law will be is conjectural, some observers contending that it will be upheld in the courts, since a similar Oklahoma law, permitting restriction of production to market demand, was upheld recently by the United States Supreme Court; while others believe the suit involving that Oklahoma law was not decided with respect to the "market demand" phase but another.

It is fairly certain, however, that the validity of the new Texas law will be tried out in the same testing ground that has condemned the two previous Texas conservation laws—the East Texas field. For already some operators there have indicated they will appeal to the courts for protection when the railroad commission issues orders prorating their production under the new law.

New Cycle in Courts

And so will begin a new cycle of actions and counter-actions in the courts, bearing down upon the new legal impediment set up to restrict the potentially great output of an unprecedented oil field.

On the eve of the opening of that new epoch in the history of the East Texas field it is extremely interesting to look back and see past proration efforts there in perspective. The great ordeal to which Texas oil conservation has been subjected by the area is thus realized at a glance. It is seen that the field was directly instrumental in discarding two Texas oil conservation laws, and in convening of the Texas legislature in two special sessions, with the result that two new conservation laws were passed, one subsequently proving inadequate, and the other being scheduled to go on trial in the immediate future.

The first of the two laws to go into the discard was a statute which had successfully weathered attacks in other Texas oil and gas fields over a period of years. Under it successful proration programs had functioned in West Texas, at Darst Creek, Salt Flat and elsewhere. But in East Texas the old conservation law did not "get to first base." Lack of confidence in it as applied there caused the Texas Railroad Commission, in fact, to procrastinate in issuing its first proration order for East Texas until April 4, 1931, when there were about 100 completed wells in the area, producing around 125,000 barrels daily. The first well of the field had been completed in October, 1930, and the great magnitude of the field had been indicated shortly after the opening of 1931 through completion of the discovery wells of the Kilgore or middle section and the Longview or northern section. Under the old conservation law the railroad commission issued proration orders based first on a combination well-potential and acreage-unit basis and later on a strict acreage unit basis. But the orders were virtually doomed to failure even before being issued. Likewise, a

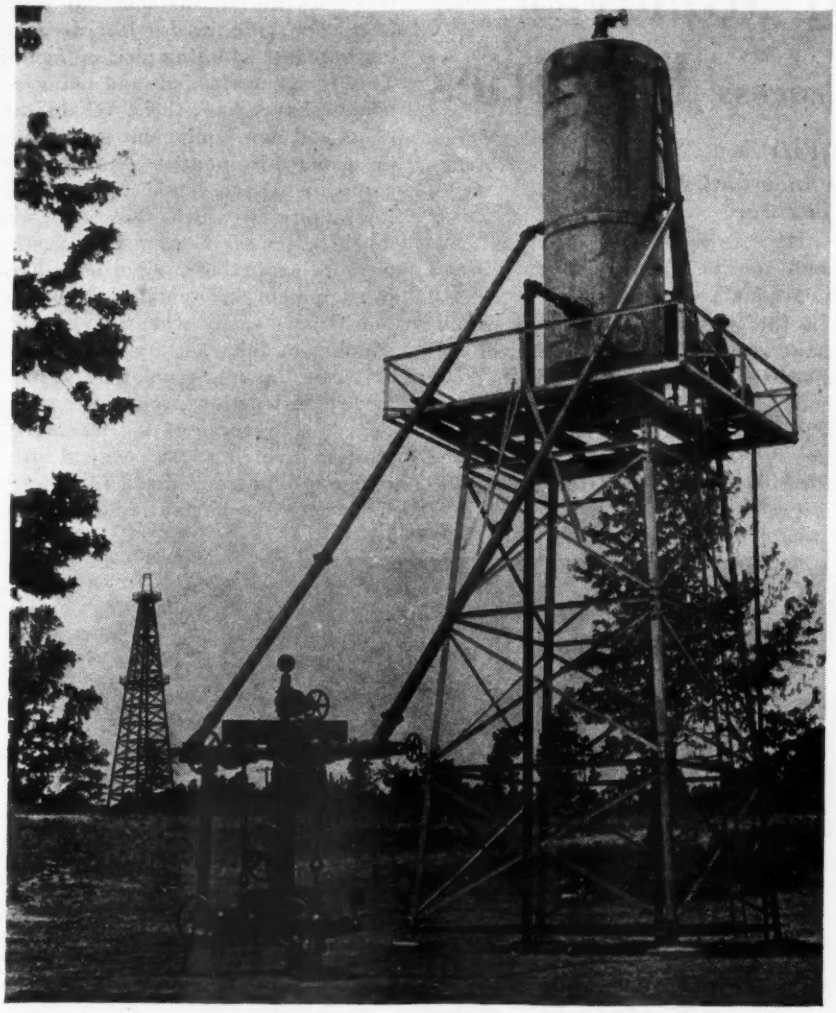
Proration Allowances in East Texas Field Following Military Shut-Down

Following complete shut-down of production under martial law from August 17, 1931, through September 4, 1931, proration has been in effect, with all wells given equal daily allowances, although the per-well daily quota has been reduced repeatedly, as shown in the table below, under orders of the railroad commission part of the time, and of the governor of Texas part of the time.

Period beginning:	Barrels daily per well
September 5, 1931	225
September 21	185
October 13[1]	165
October 29	150
November 7	125
December 11	100
February 5, 1932	75
February 25[2]	75
March 16	72
April 1	71
April 16	67
May 1	61
May 16	59
June 1	54
June 16	51
July 1	50
July 16	46
August 1	44
August 16	43
September 1	50
September 16	46
October 1	44
October 15	40
November 1	40
November 15	40

[1] Commission assumed proration September 5, 1931, following miiltary shut-down, and set per-well quota at 225 barrels daily, subsequently reducing allowance to 185 and then to 165 barrels. October 13, when latter quota was scheduled to go into effect, the commission was enjoined in federal court from prorating wells of a group of operators. Governor R. S. Sterling on that same date took proration out of the hands of the commission, declaring martial law and continuing the 165-barrel allowable. The governor subsequently made further reductions until the per-well quota was set at 75 barrels daily effective February 5, 1932.

[2] Railroad commission held hearing at Austin February 12 and effective February 25 again assumed proration, temporarily continuing the 75-barrel allowance but subsequently cutting the quota semi-monthly to hold maximum production around 325,000 barrels. September 1 the maximum was raised to 375,000 barrels, but on October 15 it was cut back to 335,000 barrels. October 24 a federal court decision declared the commission's program invalid, and the commission thereafter made no changes in allowables, pending action of special session of legislature. That body passed new "market demand" oil conservation law November 12, and the commission scheduled a state-wide hearing November 26 preparatory to issuing orders under the new law.



One of the 9,000 producing wells of the East Texas field. Like nearly all the others it is still a flowing producer.

plan of voluntary proration by the operators was futile.

It was evident a new law was needed, and a special session of the legislature was called, but before a new law could be passed and placed in effect the field had 1600 wells, and production soared above 1,000,000 barrels daily, resulting in the Texas governor proclaiming martial law and completely shutting in production with the aid of soldiers for the 19 day-period August 17-September 4, inclusive.

On September 5, 1931, the ban on production was lifted, and the field began producing under the railroad commission's proration orders issued under the new law. From that time forward proration has been applied in East Texas on a flat per-well daily allowance basis, all wells sharing equally in the field's production. In fixing the allowable the railroad commission first took the lead, then surrendered leadership to the governor and his martial law aides because of being attacked in federal court, and in February, 1932, again assumed the initiative when the governor's martial law proration program was held invalid in federal court.

Court Throws It Out

But the commission's authority to prorate East Texas under the existing law had not yet been tested in the courts. It was given such test in a federal court hearing at Houston beginning May 30, 1932, and when the decision on that hearing of the facts in the case was made public July 20, 1932, the commission was left free of interference by the courts. But when the suit came on for hearing on its merits at Houston, September 19-22, 1932, evidence was presented which resulted in the federal court's handing down an opinion October 24, 1932, declaring the railroad commission's East Texas proration program invalid. It is asserted that whereas the Texas law expressly charged the commission with preventing physical waste that body had in fact sought to prevent economic waste—to control the price of oil by restricting production to market demand.

Special Legislature

In consequence of that decision another special session of the legislature convened November 3, 1932, in response to the call of Governor Sterling, and on November 12 it passed by a two-thirds majority vote a new law which went into effect immediately through prompt signing by the governor. It is that new law which will be on trial when the railroad commission issues proration orders for East Texas following its November 26 hearing.

It is to be expected, however, in the light of past history of East Texas proration, that even if the new law proves lack-

(*Continued on page* 11)

Production Statistics for the East Texas Field Recovery

Year	Barrels
1930	21,952
1931	106,505,354
1932: through Nov. 15	108,586,070
Total	215,113,376

Production Trend

Week ending	No. Wells	Av. Daily Prod. Bbls.	Week Ending	No. Wells	Av. Daily Prod. Bbls.
November 12, 1930	1	185	1932—		
January 7, 1931	5	501	January 5, 1932	3,718	329,527
February 4	11	7,362	February 2	4,003	349,250
March 4	34	56,037	March 1	4,344	309,919
April 1	125	144,664	April 5	4,779	337,565
May 6	389	268,902	May 3	5,282	342,535
June 3	703	351,476	June 7	6,052	330,662
July 1	957	351,957	July 5	6,686	335,997
August 5	1,468	654,236	August 2	7,246	329,292
August 19	1,644	[1]848,398	September 6	7,852	355,543
September 2		([2])	October 4	8,273	394,131
October 6	2,274	403,884	November 1	8,689	349,161
November 3	2,797	419,441	November 15	8,891	355,727
December 1	3,291	402,233			

[1] Although this figure represents daily average for seven-day period, most of the output for the week was produced in first five days, martial law shut-down of field going into effect on morning of August 17, 1931.

[2] Field was shut down under martial law orders during period August 17, 1931, to September 4, 1931, inclusive.

Refiners Will Spend Money *In* Expanding *Process* Facilities

GEORGE REID
Associate Editor, The Refiner and Natural Gasoline Manufacturer*

A preliminary study of the processing facilities of the refining industry indicates that resumption of construction activity after the first of the year is to be aggressive. This is especially true of the cracking and reforming departments, and to a lesser degree, of the general distillation department.

A study of the facilities for cracking oils owned by 25 leading refining companies, for example, shows shut down cracking capacity totalling 335,000 barrels, representing 418 shut down units —and the majority of these units are of the 1925-26 vintage, obsolete in design, hazardous of operation—and must be replaced. The total shut down cracking capacity for all the industry is around 395,000 barrels (482 units) much of which, of necessity, will be replaced or rehabilitated, for the industry is still out of balance and does not have sufficient cracking capacity as compared to operating straight distillation capacity.

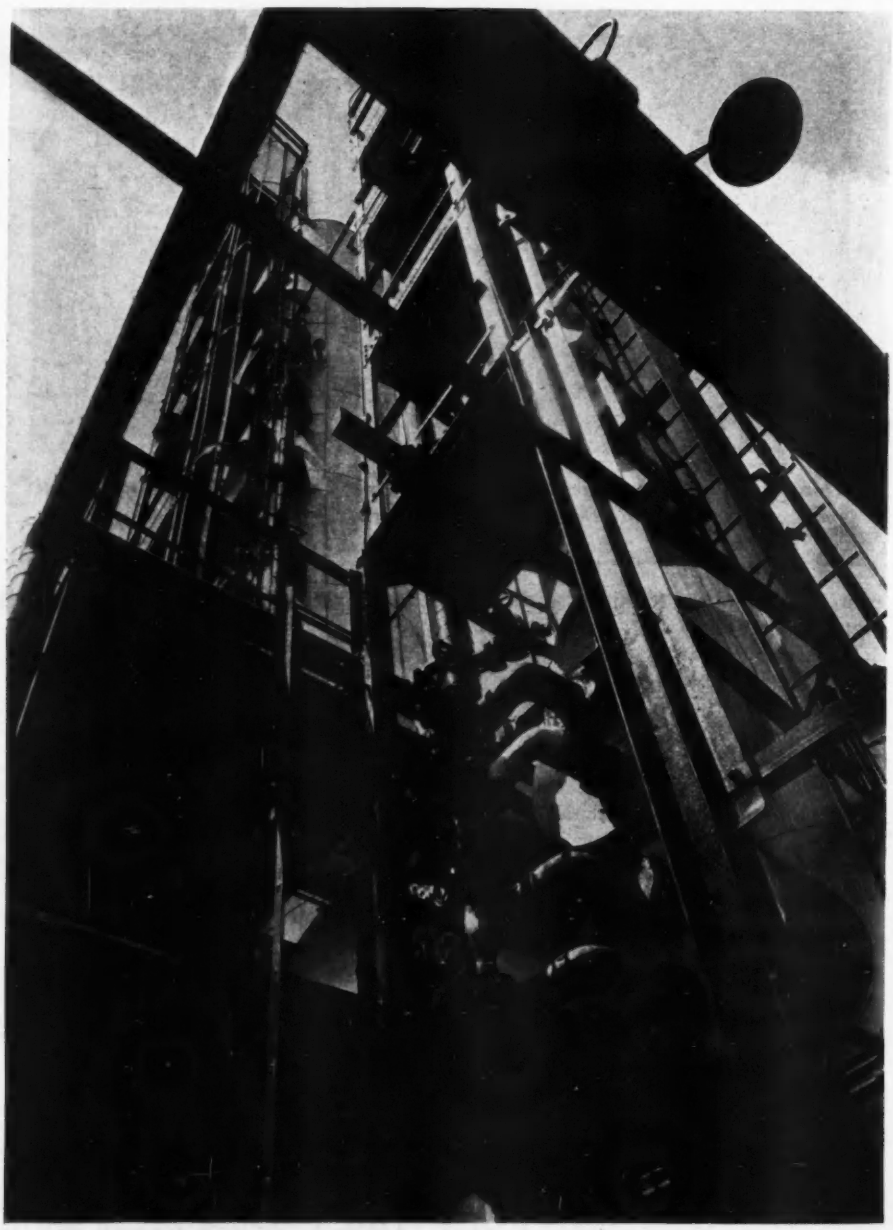
With about 280 concerns operating refineries, about 155 of them have no cracking equipment, and many of these concerns know that something must soon be done about it. About 125 companies with refineries are provided with cracking facilities—a surprising number of such units being seven to eight years old; rapidly approaching that state where they are ready for dismantling or conversion to less severe service. This field must expand during 1933. It will duplicate the history of 1931 and add around 100,000 barrels capacity, replaced around 150,000 barrels lost through obsolescence, and it will see remodeling and rehabilitation of around 100,000 barrels capacity. Further, rehabilitation and construction is distillation of all types recovery, stabilization, power plants and piping, will be of like importance.

By rehabilitation—(the replacement of obsolete equipment) is not meant enlargement of capacity for production beyond economic requirements. It means the adjustment of plants to produce present output with less waste. In some cases it involves scrapping of machines and processes which can not be operated efficiently on a scale of production consistent with current demands for the quality and quantity of the products.

In this industry the service is unusually severe. Again, technical advancement is unusually swift. The combination of the two factors, accompanied by a retarding of construction recently, points definitely to renewed efforts to possess modern efficient facilities in refining.

Rapid improvement of equipment and processes during the past three years offers opportunities for increased earning to plants adopting modern facilities. This is acknowledged, and many companies have had their rehabilitation plans and new equipment specifications on paper for months. Further, many companies have liquid funds drawing low interests which they feel would much better serve them by investment in more profitable equipment. Changes in equipment, incidentally, can be made much more easily when plants are not running at full capacity.

Recent announcements relating to large construction programs to be engaged in by some of the leading companies, involving the expenditure of many millions for plant facilities, are believed to be but an indication of the



The new gasoline recovery and stabilization plant at Continental Oil Company's Ponca City refinery as seen by the modernistic photographer. This picture was secured by pointing the camera skyward from the base of unit.

*A Gulf Publishing Company Publication.

aggressiveness to be experienced next year in this field.

The industry enters 1933 with its inventories low, lower possibly, than at any time in the past two decades. Its obsolete equipment is variously estimated at from 25 to 40 per cent of total operating capacity. Its total cracking capacity is out of balance with indicated requirements. These are the conditions that bring about necessity for aggressive remedial steps during 1933.

East Texas Proration
(*Continued from page 9*)

ing, control of some kind will continue in East Texas, due to the maneuvers which are possible in the courts. Then if the new law is finally condemned, another can be passed, and the cycle will begin over again.

The above paragraph is not based upon what might happen, but upon what has happened. For despite the complications which have attended proration in East Texas, the fact remains that the field has been under effective control during all but a few weeks since it assumed major proportions in the spring of 1931. The first conservation law which was applied proving ineffective, another was substituted; and in the 15 months which were required for condemning that second law, East Texas has been consistently held under control, its production restricted to levels of 300,000 to 400,000 barrels daily, despite the fact that in the meantime the number of producing wells has reached approximately 9000, nearly all wells still being capable of flowing large volumes of oil.

To Permit Petition On Conroe Case

Austin, Texas.—During the past week the Texas Supreme Court granted Alpha Petroleum Corporation leave to file a petition for a writ of mandamus preventing the Railroad Commission of Texas from interfering with the company's production in the Conroe field, Montgomery County.

It is expected that the court will hand down a decision on the petition early this week.

Supreme Court Will Hear Texas Case

Austin, Texas.—Assistant Attorney General Maurice Cheek has received notice that the United States Supreme Court has set December 6 to hear arguments in the McMillan case, the first suit filed in federal court attacking the right of the state to prorate oil production.

The state lost this case before a three-judge federal court at Houston.

Water Problem *Main* Obstacle *In Way of* Proposed Hobbs Unit

Little Possibility Now of Field Ever Being Operated As a Unitized Pool. Water Encroaching.

Hobbs, New Mexico.—Prolonged efforts on the part of a number of the lease owners in the Hobbs field to pool all properties for a unit plan of operation is now considered definitely impossible. There are more companies opposed to joining a pooling agreement than was the case some six months ago. The aggravated water situation on the west flank of the structure has caused owners of leases situated in a more favorable structural position to be reluctant to entering a pooling arrangement. An earnest effort to unitize the entire field has been under way for 11 months, and early this year gave promise of materializing as far as the lease owners were concerned, but then approval had not been gained of royalty interests.

Water encroachment has been rapid along the structurally low points of the field within the past year. Water has appeared in 28 of the 167 completed wells, but the number of wells making water has since been reduced to 22 through the application of greater back pressure, and in most instances at a sacrifice of the maximum proration allowable.

Striking success met with by The Texas Company in lowering the large volume of water appearing in McKinley 2 by placing a packer on three-inch tubing about 96 feet off bottom of the hole, and about 65 feet below the top of the white lime marker indicates that water production in the field may be curbed greatly. McKinley 2 was flowing 200 barrels oil, plus 20 per cent water daily, carrying 440 pounds pressure on tubing and 155 pounds pressure on casing. On the second day after installation of the packer, which served to cutt off migrating water in the top section of the lime horizon, the volume of water had been lowered to three per cent without a loss in oil production. Three weeks have elapsed since the placing of the packer, and production is now averaging 220 barrels oil, plus 1.5 per cent water.

Sun Oil Company has ordered a packer set in McKinley 2, which is making 50 barrels oil, plus 50 per cent water, and it will be located so as to shut off most of the top section of the lime. Packer on tubing has been used successfully by Continental Oil Company in cutting off big gas production in the upper section of the pay.

Status of Water Wells in Hobbs Field, New Mexico

	Elev.	Producing Horizon	Init'l Prod.	Date Comp.	Date 1st. water Appearance	Prod. Oil bbls.	Percentage of water
Amerada Pet. Corp.'s State 1-C	3659	4204-4236	450	1-28-31	1-30-31	39	20
Atlantic Oil Prod. Co.'s O. O. Bradley 1	3632	4030-4205	5378	9-12-30	8-16-31	116	39
Continental Oil Co.'s State 1-C	3622	4040-4178	20,671	12- 7-30	8-11-31	160	5
Gypsy Oil Co.'s W. D. Grimes 5	3632	4022-4192	5785	9- 7-30	9- 8-32	154	Now clear
W. D. Grimes 6	3626	3985-4166	9493	10- 4-30	6- 9-32	187	30
Humble O&R Co.'s State 2-A	3661	4150-4230	3960	11-29-30	8-29-31	Dead	..
State 3-A	3666	4150-4220	2786	11-29-30	7-21-31	215	50
Landreth Prod. Corp.'s State 1-C	3642	4196-4221	389	1- 6-30	1-14-31	110	12
Midwest Refining Co.'s							
McKinley 1 (NW¼ Sec. 5)	3626	4010-4190	9526	10-20-30	3- 4-32	185	64
McKinley 6 (NW¼ Sec. 5)	3626	4037-4202	2203	10-12-30	10-15-32	91	1.5
McKinley 26 (NW¼ Sec. 5)	3625	4000-4208	12,215	12-13-30	10-22-31	195	51
State 29 (NW¼ Sec. 10)	....	 4180	886	4-30-32	10-15-32	139	35
State 33 (NW¼ Sec. 4)	3612	4018-4175	4536	8-28-30	8- 7-32	181	11
State 11 (SW¼ Sec. 5)	3620	4030-4057	8230	1-28-31	6-10-31	194	64
State 1 (NE¼ Sec. 9)	3606	4055-4245	700	July 1928	.....	53	Now clear
State 11 (NW¼ Sec. 9)	3602	4090-4175	2138	2- 2-31	7-20-31	73	Now clear
State 1 (NW¼ Sec. 15)	3592	4135-4143	6500	7- 1-30	5- 9-32	92	Now clear
Terry 8 (NW¼ Sec. 9)	3601	4115-4190	3888	2- 9-31	4- 4-32	103	33
Ohio Oil Co.'s							
State 1 (Sec. 9)	3591	3998-4312	80	12-4 -29	12- 4-29	10	..
State 4 (Sec. 30)	3657	4100-4215	3693	11-28-30	3-13-32	140	40
State 5 (Sec. 32)	3625	4063-4176	7096	10- 9-30	7-15-32	160	6
Sinclair Prairie Oil Co.'s							
Crump 2	3586	4137-4172	1080	6-26-30	5-20-32	Dead	..
F. Selman 1	3595	4153-4180	600	6-21-30	9-1 -32	46	Now clear
Sun Oil Co.'s							
NcKinley 2	3640	4028-4175	4406	10-14-30	2-17-32	51	50
McKinley 3	3626	 4175	8813	10-26-30	4-14-32	67	7
McKinley 4	3622	4047-4200	21,708	12-12-30	1- 1-32	87	10
The Texas Co.'s							
McKinley 2	3612	4020-4175	9817	10- 7-30	11-29-31	220	1.5
F. Selman 1	3589	4110-4183	377	8-12-30	8-14-32	43	Now clear
Walker Oil Corp.'s							
O. B. Terry 2	3590	4130-4190	525	6-27-30	5-20-32	30	2

Original Oklahoma Well *Being Reconditioned* After 35 Years

FLOYD SWINDELL
Staff Representative

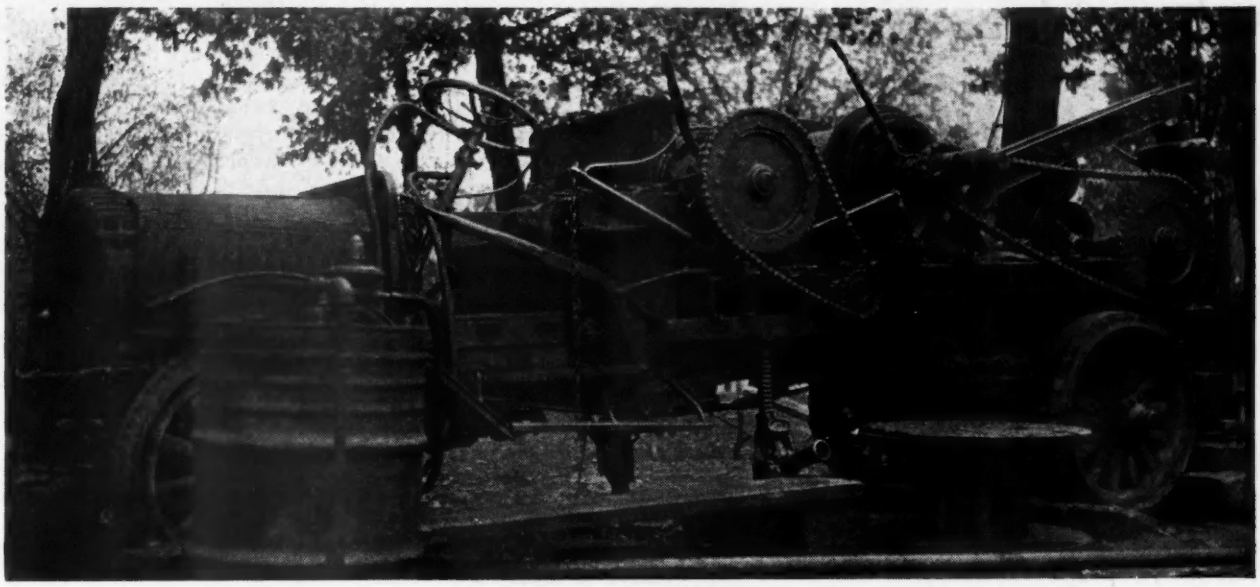
OKLAHOMA'S oldest producing oil well is being cleaned out for the first time in 25 years. More than 35 years have elapsed since the well was completed. During this time many old timers who were familiar with it and who participated in the boom which it subsequently precipitated, have passed on. Its promoter died about two years ago and at about the same time the records of the operating company were entirely destroyed by fire. Now only approximate records are available on completion date, total depth, formation records, and casing depth. If the well could talk here is about the story that would be unfolded.

George B. Keeler came to Bartlesville, Indian Territory, in 1871. In 1875 he and Jasper Exendine were rounding up cattle in the vicinity of Sand Creek. An oil excitement in Neodesha, Kansas, in 1871 had made the natives of Southeastern Kansas, and Northeastern Oklahoma oil wise. In those days an oil seep was as good as could be asked for as an indicator of the presence of oil in "abundant" quantities. Nothing that their horses refused to drink the water of Sand Creek because of a black scum and a peculiar odor, Keeler and Exendine concluded that it must be oil and gas. Keeler secured a sample of the scum which upon analysis proved to be crude petroleum. He immediately took steps to secure a lease from the Cherokee Nation and was finally successful in obtaining rights on a tract five miles square with its west line on the 96th meridian.

Keeler then went to Neodesha, Kansas, which had become a mecca for oil men, and induced Guffey and Galey to drill a well on the tract. Guffey and Galey insisted that a larger lease should be secured and Keeler directed his efforts to this end. At the time Little Star, principal chief of the Cherokee Nation, was visiting friendly tribes in North Texas. Keeler had considerable difficulty in locating Little Star and while he was on the trail of the chief Guffey and Galey sold out to Forrest Oil Company, which later became Prairie Oil & Gas Company. Forrest Oil Company was not interested in taking on such a rank wildcat proposition and Keeler was finally able to make a drilling deal with the old Cudahy Oil Company, now National Refining Company. In the meantime government officials took the stand that such large leases should not be granted and Keeler's lease was reduced from five miles square to one mile square with the proposed drilling site as a center.

Early in 1895, Sam Weaver, a wildcatter of note in the nineties, had shipped a string of tools from Bowling Green, Ohio, to Red Fork, Indian Territory, and spudded a test either in Section 29-or 31-19n-12e, about two miles southwest of the little cattle town of Red Fork and four miles southwest of what is now Tulsa. Amos Steelsmith, brother-in-law of Weaver, had visited the area during the previous year after reports of large oil seeps in the Osage Nation had drifted into the oil areas of the east. Steelsmith at first tried to obtain leases in the Osage country but found it so tied up with governmental and tribal rules that he came farther south where prospects were not so "hot." After securing a blanket lease on approximately 5000 acres he hurried back to Ohio and induced Weaver to join him in the wildcat venture. Weaver came in advance of the tools and was on the ground when they arrived in Red Fork. The test was drilled to an approximate depth of 1290 feet and abandoned after many exciting experiences with visiting Indians, whom Weaver and Steelsmith often regarded with anxiety. A small showing of oil at about 175 to 222 feet was all that resulted from the test, but a

Clyde Uhl With Clean-Out Machine of His Own Design. Note Eccentric Drive on Walking Beam.



Fifty-Five Gallon Steel Drum in Left Foreground Acts as Gas Reservoir. The Machine Is Controlled from This Side.

few years later it was found that an additional 15 feet of depth would have put it in the prolific Bartlesville sand.

Having ventured so much on the test, Weaver and Steelsmith were reluctant to ship the tools back to Bowling Green and were fortunate in making a deal with Keeler to use them in his test at the north edge of Bartlesville. Keeler went to Red Fork in 1896 and hauled the rig and tools to Bartlesville, a slow and tedious journey over the crude trails then in existence. The derrick was erected late in 1896 and the test spudded early in 1897. Although the record is based on the recollection of early settlers, it appears that the sand was found in April of that year. Records obtained from National Refining Company show that gas sand was encountered from 1252 to 1267 feet and oil sand from 1303 to 1320 feet, at which depth the well started flowing. There being no market, the "great find" was shut in and not reopened until August 17, 1903, when it was shot with 20 quarts at 1306 to 1319 feet. Eight days later it was placed on production which has been almost uninterrupted until the recent clean out job.

Secondary to the history of this old well but perhaps of equal interest is the clean-out job now in progress. As nearly as can be determined the well is cased with 41 feet of 10-inch drive pipe and about 980 feet of 6¼-inch wrought iron casing, which was in general use before the advent of modern steel casing. The smaller string is thought to be set in a limestone which directly underlies Oswego lime. The well, Nellie Johnstone 1, NE NE Section 12-26n-12e, in what is now Johnstone Park, in the north edge of Bartlesville, is one of several on the large lease and has not been individually gauged since about September, 1930, when it was making one-half barrel of 29 gravity oil per day. A gradual increase in water and decrease in oil production led operators to decide upon the cleaning out job which is the first in more than 25 years and one of the few times that it has been reconditioned since it was placed on production on August 25, 1903. No record is available on cumulative production. Clyde Uhl, pioneer oil man of Northeastern Oklahoma, is doing the work.

An Old Truck Transmission is Mounted on the Frame Between the Sand Reel and the Drilling Drum.

Very little cavings were found in the hole, but since being partially cleaned out it has been found to be making water through a hole in the 6¼-inch casing and operators are planning on running a string of 4¾-inch casing to set with packer below the 6¼-inch. Mr. Uhl is using a clean-out machine of his own design and one which ranks in interest along with the historical background of the well. The clean-out machine has been in use for several years in the fields of Washington and Nowata Counties. Gas is supplied from the lease line to an old 55-gallon oil drum, passed through a regulator and an ordinary type carburetor to the motor. A power take-off on the main shaft drives into an old truck transmission transmitting power to the sand reel mounted directly behind the seat. Power is in turn transmitted from the sand reel to the drilling drum and through an eccentric to the walking beam. A 30-inch stroke is gained at the end of the beam.

Natural Gas *Production Shows Decline for First Time* In 1931

DUE chiefly to reduced demand for field purposes and for carbon black manufacture, United States production of natural gas failed in 1931 for the first time since 1921 to register an increase over the previous year's record. The marketable production in 1931 was 13 per cent under that of 1930, the output of 1,686,436,000,000 cubic feet representing a decline of 256,985,000,000 cubic feet. These figures showing the first interruption for a decade in the steady expansion of the natural gas industry have been revealed in a report of the Bureau of Mines, dated October 22, 1932, and designated as Mineral Market Report No. M. M. S. 151.

The natural gas produced in 1931 had a total value at the wells of $117,505,000 according to the report, and at the points of consumption of $392,816,000.

Exports of natural gas to Canada and Mexico increased in 1931, totaling 2,231,000,000 cubic feet, of which 74,000,000 went to Canada. Imports into the United States (Montana) from western Canada increased from 21,000,000 cubic feet in 1930 to 44,000,000 feet in 1931.

Total consumption, production, plus imports minus exports in 1931 aggregated 1,684,249,000,000 cubic feet. Of that amount 34 per cent was used for field purposes, 23 per cent for domestic and commercial purposes, 12 per cent for manufacture of carbon black, eight per cent for fuel at electric public-utility power plants, four per cent as fuel at petroleum refineries, and 19 per cent for other industrial purposes. Compared with 1930, those figures represent gains in the uses for domestic and commercial consumption, electric public-utility power plants, and general industrial uses, at expense of the proportions for field, refinery and carbon black plant consumption.

Despite almost universal declines in fuel consumption, the amount of natural gas served to domestic and commercial consumers increased 1.2 per cent, due largely to opening of several new interstate lines and to the full year's operation of several on which service was inaugurated late in 1930.

The number of domestic and commercial consumers rose from 5,448,000 in 1930 to 6,976,000 in 1931, a gain of 28 per cent, due largely to the opening of interstate lines. The increase in consumers was a continuation of the increase which has been under way since 1906 with only the exception of the year 1919.

Average price paid for natural gas by domestic and commercial consumers has increased steadily in recent years, due in part to mixing of natural gas with relatively higher priced manufactured gas. The average price in 1931 was 65.5 cents per 1000 cubic feet, against 63.5 cents in 1930.

Natural gas used in field work, the largest outlet for the product, dropped 21 per cent in 1931, since field work during the year included completion of only 12,432 wells against 21,240 in 1930.

Carbon black producers restricted

(*Continued on page* 18)

Summary of Natural Gas Statistics, 1931

STATE	PRODUCTION			CONSUMPTION									
				Domestic (inc. commercial)			Industrial						
							Field (drilling pumping, operating gasoline plants, etc.)		Manufacture of carbon black		Fuel at petroleum refineries, electric public-utility power plants, and other industrial		
											Millions of cu. ft.		
	Quantity (millions of cu. ft.)	Estimated Average value at wells per M cu. ft. (cents)	Average value at points of consumption M cu. ft. (cents)	Thousands of consumers	Consumption (millions of cu. ft.)	Average value at points of consumption per M cu. ft. (cents)	Millions of cu.ft. (estimated)	Value (thousands of dollars) (estimated)	Millions of cu. ft.	Value at points of consumption (thousands of dollars)	Petroleum Refineries	Electric public-utility power plants	Other industrial	Value at points of consumption (thousands of dollars)*
Alabama				22	798	127.8							7,660	1,308
Arkansas	13,300	5.1	20.3	67	7,623	51.0	10,113	808			2,117	1,803	10,622	1,853
California	305,930	7.0	25.0	1,346	54,729	91.5	150,331	10,404			18,234	45,907	36,729	15,847
Colorado	2,536	2.8	37.1	96	5,392	78.4	413	10			5	150	10,932	2,077
Georgia				61	2,256	113.4						1,232	1,416	437
Illinois	2,130	7.9	46.9	999	3,631	125.8	2,038	161			11		8,370	1,854
Indiana	1,337	25.6	52.3	66	1,358	105.1	20	5				1,377	1,940	1,098
Iowa				53	471	110.2						358	2,693	575
Kansas	38,742	8.0	29.7	193	19,402	57.4	10,287	1,201			2,230	11,315	22,375	5,946
Kentucky	27,870	14.9	36.4	160	10,786	50.6	1,316	223					3,431	1,010
Louisiana	224,155	2.9	16.8	137	9,690	57.4	11,806	479	52,204	1,467	8,634	18,612	31,040	6,808
Michigan	472	14.4	23.5	3	32	103.1	43	6					397	72
Mississippi	6,048	4.1	24.1	24	1,961	57.9	13	1				44	2,352	354
Missouri	1,534	8.0	44.7	327	9,734	78.2	7	1			1,106	1,106	12,308	2,847
Montana	10,949	4.1	30.1	25	3,804	44.8	890	98	206	4	125	569	2,765	639
Nebraska				43	1,163	89.2						1,084	2,570	746
New Mexico	19,354	2.1	12.4	12	1,344	52.2	8,427	300				2,357	315	419
New York	7,868	32.5	68.2	274	15,437	69.3	255	101			1	25	1,238	756
Ohio	56,326	17.1	56.9	1,198	80,202	63.1	3,643	996			11	3,180	20,424	9,841
Oklahoma	263,685	4.4	12.4	247	26,273	47.5	185,915	9,176	†	†	7,510	7,935	†21,316	†4,512
Pennsylvania	74,797	28.2	50.6	665	48,385	61.7	5,039	1,668			785	54	38,366	12,836
South Dakota	12	8.3	33.3	12	1,142	49.7							1,661	262
Tennessee	25	16.0	36.0	42	2,748	69.5						3,729	1,146	899
Texas	464,580	2.2	15.9	532	42,937	65.0	149,034	11,269	135,653	2,279	25,308	37,028	57,672	17,872
West Virginia	124,797	18.9	46.6	171	22,210	36.9	13,326	2,992			876	80	18,623	5,342
Wyoming	39,770	2.8	10.4	17	3,479	43.7	18,447	570	†	†	8,595	223	†5,878	†797
Other	219	6.8	45.8	184	3,910	81.7	2		7,333	298		175	†5,794	1,321
TOTAL 1931	1,686,436	7.0	23.3	6,976	380,897	65.5	571,365	40,469	195,396	4,048	75,548	138,343	322,700	98,030
TOTAL 1930	1,943,421	7.6	21.4	5,448	376,407	63.5	723,165	59,118	266,625	6,002	98,842	120,290	356,315	111,226

*Includes value of gas used at petroleum refineries and electric public-utility power plants.
†Included under "Other States" for United States total and under "Other Industrial" for State total to avoid revealing figures of individual operators.

THE OFFICIAL OIL DOCTOR

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MEN IN THE INDUSTRY'S NEWS

ALEX M. ALEXANDER, in charge of magnetic work for Empire Oil & Refining Company for the past four years, resigned effective November 1, and will engage in consulting geology and geophysics with headquarters at 1124 Hunt Building, Tulsa, Oklahoma.

JACOB FRANCE, president of Mid-Continent Petroleum Corporation, has recovered from an attack of influenza.

O. D. DONNELL, president, Ohio Oil Company, spent two days in Oklahoma following the A. P. I. meeting at Houston. Short stops were made in Ardmore, Chickasha, Oklahoma City, and Tulsa.

DR. FREDERIC H. LAHEE, chief geologist for Sun Oil Company and president of the American Association of Petrolem Geologists, spoke to the Tulsa Geological Society at its weekly luncheon Wednesday, November 23. Dr. Lahee has just completed an extended visit to various societies which are affiliated with A. A. P. G., giving members an outline of conditions of the society and plans for the immediate future.

R. E. ALLEN, assistant oil umpire in California, has returned to Los Angeles after an extended Eastern trip. Allen is a member of the Volunteer Committee on Petroleum Economics and met with other committee members in Washington two weeks ago.

WILLIAM H. ANDERSON, well known London geologist, is examining properties in Ventura County, California, for English interests.

A. M. LOCKHART has resigned as vice president of Rio Grande Oil Company at Los Angeles. He helped to organize the company several years ago.

A. H. BELL, general superintendent for Continental Oil Company in California, has been elected vice president of Kettleman North Dome Association, to succeed R. E. Collom.

SIR JOHN CADMAN, chairman of Anglo-Persian Oil Company, Ltd., is visiting in Los Angeles and San Francisco before returning to New York City.

ROBERT H. DEARING, 77, senior member of the pioneer rotary contract drilling firm of R. H. Dearing & Sons, died after a brief illness on November 23 at Dallas, Texas, where he has resided for the past 35 years. He was also president of Royal Petroleum Corporation, owner of a number of properties in the East Texas field. Survivors include his wife and two sons, Willis R. and Charles B. Dearing. Fneral services were held in Dallas November 24, with interment in cemetery at Hillsboro, Texas.

E. C. TEMPLETON, of Los Angeles, geologist for Union Oil Company, and W. G. Gallagher, of Beeville, Texas, and formerly of New York, who was assisting Templeton in geological work, suffered fatal injuries when the air plane in which they were riding crashed at Wharton, Texas, Monday night, November 19. C. F. Lienesch, pilot of the plane, received cuts and bruises, but was not critically injured. He stated that carbon monoxide gas issuing from the plane affected the two passengers and later rendered him unconscious before the plane came to earth on an unlighted landing field at Wharton.

R. E. COLLOM, formerly manager of the California production division of Continental Oil Company, has assumed the duties of his new position as assistant to President D. J. Moran, with headquarters at Ponca City, Oklahoma. H. B. Simcox, formerly assistant manager of the production department, succeeded Mr. Collom, and has taken up headquarters in Los Angeles.

Collom's promotion follows more than 20 years of experience in the petroleum industry. Spending his boyhood in Golden and Denver, Colorado, he attended the Colorado School of Mines for two years, and graduated from Stanford University as a mining engineer in 1906. After college, his first job took him to the Nevada desert where he spent 18 months making a mining survey. After a period of employment for the Vanadium Alloys Company in southern Colorado, Collom started his career in the petroleum industry by going to work in the Coalinga, California, oil fields for the Esporanza Oil & Gas Company. He was sccessively employed by the Oil Producers Agency, and the Producers Transportation Company, pipe line subsidiary of the Union Oil & Gas Company, and in October, 1915, joined the California State Mining Bureau as petroleum engineer at Taft. He later became deputy supervisor of the State Oil & Gas Mining Bureau, and then chief deputy. A year later he joined the United States Bureau of Mines as petroleum technologist, and in another year returned to California as state oil and gas supervisor. In 1923, Mr. Collom was employed by the Coast Land Company, a subsidiary of the former Marland Oil Company, as chief geologist, and at the time of the Continental-Marland merger in 1929, he was executive vice president of Marland Oil Company of California.

R. E. COLLOM

H. B. Simcox, who succeeds Collom as manager of Continental's California production division, is also a veteran oil producer. Born near the site of America's first oil well in Venango County, Pa., he worked in the old Bullion oil fields as a boy and while attending Grove City college. Following his employment in the Pennsylvania fields, Simcox migrated to Texas and was present when Spindletop, outstanding among the "booms" of oil history, was at its peak in 1903. He was successively employed by the J. M. Guffy Petroleum Company, Gulf Production Company, The Texas Company, and Continental Oil Company. Mr. Simcox joined Continental Oil Company in 1916, and at the time of the Continental-Marland merger was manager of the production department.

FREDERICK G. CLAPP, consulting geologist, New York, is in Houston on a business trip. He was present, incidentally, for the annual meeting of the American Petroleum Institute.

More Leases Announced on "Conroe Trend," Louisiana

Alexandria, La. — Shell Petroleum Corporation has leased 2100 acres from Pardee Lumber Company in Sections 17-, 22-, 23-, 24- and 29-4s-1w, Evangeline Parish, just east of Beauregard Parish and just south of Rapides Parish, for $2 per acre and a delayed rental of $1 per acre. The company recently completed a seismograph survey of this region and is believed in some quarters to have discovered a deep-seated high.

In Beauregard Parish O'Brien Brothers and Milton Smith of Shreveport took a 10-year commercial lease at 30 cents per acre on 20,000 acres located in townships 3 and 4 south, ranges 7 and 8 west.

Powell and associates of DeRidder, in the same parish, have leased 6000 acres from Long-Bell Lumber Company, centering in Section 34-2s-9w, the consideration being the spudding of a well by next January 1.

In Rapides Parish, M. I. Richardson, Trustee, who recently took a 15,000-acre block from the same company in Beauregard Parish, has leased 18,000 acres from Long-Bell Lumber Company, the consideration being the spudding of a 3000-foot test by January 1, and just as in the Beauregard Parish block, a $5000 forfeit bond was posted.

Humble Oil & Refining Company is still increasing its Rapides Parish block that centers around the B. E. Smith Lumber Company holdings in Township 2 north, Range 2 west. It now has 60,000 acres in Township 2 north, Range 2 west, in Township 1 north, Ranges 2 and 3 west, and in Township 1 south, Ranges 3 and 4 west.

In Vernon Parish, which borders the Texas line, Humble Oil & Refining Company has leased 36,000 acres from the W. K. Henderson Land Company through the Commercial National Bank of Shreveport, on a 10-year basis, for a bonus of 30 cents per acre and a similar delayed rental. This block is in Township 1 south, Range 8 west.

Berlin, Germany.—Production of crude petroleum in Germany in 1932 is expected to be about the same as in 1931, with increases in the province of Hannover offsetting reduction of output in Thuringia. It is estimated that German crude oil production in 1931 amounted to 1,596,000 barrels, including output in both Hannover and Thuringia. During 1930 Germany imported about 20,000,000 barrels of petroleum and products, and in that year domestic production was about seven per cent of requirements.

Natural Gas Production Shows Decline for First Time in 1931

(*Continued from page* 14)

operations in 1931 and used only 195,396,000,000 cubic feet of natural gas, or 27 per cent less than in 1930.

The 75,548,000,000 cubic feet of natural gas used at petroleum refineries in 1931 was 24 per cent under 1930 consumption, and is attributed to the fact that refiners have found it cheaper to use fuel made at their plants, such as fuel oil, refinery gas, and coke.

Consumption of 138,343,000,000 cubic feet of natural gas at electric public-utility power plants in 1931 was 15 per cent higher than in 1930, constituting 8.2 per cent of all consumption as against only 3.6 per cent in 1921.

Natural gas consumption for general industrial purposes outside of carbon black, petroleum refining, and electric public-utility plants declined nine per cent from the 1930 figure to 322,700,000,000 cubic feet in 1931, because of general recession of industrial activity.

In 1931 Texas continued to rank highest in natural gas production and consumption. Oklahoma ranked first in domestic and commercial consumption, Oklahoma in field use, Texas in carbon black plant and refinery consumption, and California in use at electric public-utility power plants.

At the end of 1931 there were 55,756 producing gas wells in the country, or 736 more than a year previous. Completion of 1985 gas wells in 1931 exclusive of California indicated abandonment or disconnection of 1249 wells during the year, or considerably less than in 1930, reflecting firm market in Pennsylvania and other states having many small wells.

Interrupting a steady increase of several years, interstate movement of natural gas in 1931 declined to 332,538,000,000 cubic feet from 380,601,000,000 cubic feet in 1930.

Interstate Transportation of Natural Gas, 1931

State from which gas was transported	State to which gas was transported	M cubic feet
Colorado		
	Utah	1,590,000
	Wyoming	105,000
		1,695,000
Indiana		
	Kentucky	201,000
Kansas		
	Colorado	165,000
	Illinois	26,000
	Indiana	28,000
	Iowa	1,795,000
	Minnesota	4,000
	Missouri	3,033,000
	Nebraska	2,802,000
	Oklahoma	613,000
	South Dakota	8,000
		8,474,000
Kentucky		
	District of Columbia	259,000
	Indiana	276,000
	Maryland	14,000
	Ohio	46,000
	Virginia	37,000
	West Virginia	15,663,000
		16,295,000
Louisiana		
	Alabama	8,103,000
	Arkansas	18,241,000
	Georgia	4,904,000
	Illinois	7,553,000
	Mississippi	1,311,000
	Missouri	5,406,000
	Tennessee	7,598,000
	Texas	41,520,000
		94,636,000
Mississippi		
	Alabama	355,000
	Florida	357,000
	Louisiana	2,277,000
		2,989,000
Missouri		
	Illinois	175,000
	Indiana	186,000
	Kansas	15,000
		376,000
Montana		
	North Dakota	878,000
	South Dakota	2,776,000
		3,654,000
New Mexico		
	Arizona	357,000
	Colorado	106,000
	Texas	6,950,000
		7,413,000
New York		
	Canada	38,000
Ohio		
	Indiana	1,674,000
	West Virginia	294,000
		1,968,000
Oklahoma		
	Arkansas	737,000
	Kansas	17,013,000
	Missouri	5,447,000
	Nebraska	31,000
	Texas	2,540,000
		25,768,000
Pennsylvania		
	Canada	36,000
	New York	9,126,000
	Ohio	2,131,000
	West Virginia	262,000
		11,555,000
Texas		
	Arizona	1,882,000
	Colorado	15,779,000
	Illinois	4,166,000
	Indiana	1,395,000
	Iowa	1,727,000
	Kansas	18,313,000
	Louisiana	190,000
	Mexico	2,157,000
	Minnesota	3,000
	Missouri	9,217,000
	Nebraska	1,837,000
	New Mexico	502,000
	Oklahoma	10,419,000
	South Dakota	7,000
	Wyoming	364,000
		67,958,000
West Virginia		
	District of Columbia	1,129,000
	Kentucky	3,757,000
	Maryland	665,000
	Ohio	50,925,000
	Pennsylvania	29,387,000
	Virginia	38,000
		85,901,000
Wyoming		
	Colorado	1,000
	Montana	1,020,000
	Nebraska	147,000
	Utah	2,449,000
		3,617,000
		332,538,000

MARKETS ~ STATISTICS

Humble Readjusts Gulf Coast, Mirando Crude Prices to Lower Levels; Oklahoma Decline of 20,000 Barrels Influences Drop in Crude Output; Nothing Encouraging About Way Jobbers Buy Gasoline.

Oklahoma Influences Sharp Crude Production Decline

CRUDE oil production of the United States showed an important drop during the week ending November 26, the daily average maintained in that period being 2,109,785 barrels, or 18,605 barrels less than the average of the previous week.

The most noteworthy change for the country was registered by Oklahoma, which declined over 20,000 barrels, through combined drops of Oklahoma City, the Seminole district and the rest of the state. The amounts of those changes are indicated in the accompanying table.

Tending to offset the large decline in Oklahoma, there were nominal increases in production in Texas, Kansas and California. The Texas rise was less than 2000 barrels, which was accounted for by the East Texas field. That area was continuing to produce with an allowable of 40 barrels daily per well, despite steady increase in the number of completed wells, inasmuch as the Texas Railroad Commission was marking time with respect to regulation there pending its state-wide hearing set for November 26 at Austin.

East Texas Proration Hearing

The 40-barrel daily quota allotted to East Texas wells has been in effect since October 15, and whereas it had been customary previously for the commission to make semi-monthly reductions in the per-well allowance to compensate for addition of new wells in the field, that program was interrupted October 24 through a federal court decision holding the commission's proration program in the field invalid. Following that decision a special called session of the Texas legislature substituted the new "market demand" law for the former conservation law, and the commission's November 26 hearing was scheduled in preparation for inaugurating proration in Texas under that new statute.

The increase of Kansas production by 6000 barrels daily was accounted for almost bodily by Ritz-Decker, which jumped up to 22,450 barrels daily. California production rose 4000 barrels daily, with Long Beach, Santa Fe Springs, and Kettleman Hills showing increases of 2000 to 3500 barrels, although other fields of the state combined partially offset the gains in those three areas.

THE OIL WEEKLY

Estimated Average Daily Production in Barrels

District	For Week Ending Nov. 26	Nov. 19
TEXAS—		
Texas Panhandle	45,625	45,975
North and West Central Texas	73,200	72,900
West Texas	163,050	163,100
East Central Texas	49,800	49,000
East Texas Field	352,200	349,850
South Texas	56,660	58,250
Total Texas outside Gulf Coast	740,535	739,075
Texas Gulf Coast	134,050	134,250
Total Texas	875,185	873,325
OKLAHOMA—		
Oklahoma City	58,690	73,725
Seminole District	127,250	132,150
Other Oklahoma	180,760	181,365
Total Oklahoma	366,700	387,240
KANSAS—		
Ritz-Decker	22,450	16,810
Voshell	6,570	6,540
Other Kansas	73,080	73,275
Total Kansas	102,100	96,625
LOUISIANA—		
North Louisiana	29,075	30,525
Louisiana Gulf Coast	36,300	36,300
Total Louisiana	65,375	66,825
ARKANSAS	33,625	33,825
CALIFORNIA—		
Long Beach	70,000	68,000
Santa Fe Springs	58,000	56,000
Midway-Sunset	48,300	49,500
Kettleman Hills	63,000	59,500
Other California	234,700	237,000
Total California	474,000	470,000
MOUNTAIN STATES—		
Wyoming	34,850	35,100
Montana	5,900	6,100
Colorado	2,600	2,750
New Mexico	31,600	31,500
Total Rocky Mountain States	74,950	75,450
EASTERN STATES	98,400	103,650
MICHIGAN	19,450	21,450
Total United States	2,109,785	2,128,390

Curtailment in California Near Complete Breakdown

TWO opinions concerning the future of conservation in California are current. One holds to the claim that curtailment will become more effective, while the other expresses the belief that the whole setup will be cast aside and the law of supply and demand will replace it. The most plausible plan will be one between these two extremes. There is the possibility that curtailment in the immediate future will be ragged, as it has been in the past.

A breakdown in the curtailment plan would throw much more crude on the market than could be absorbed. This in turn would lead to lower crude and refined prices. Purchasers would back off from these excesses, and the small refiners would have a heavy supply of oil on short notice. Major companies are anxious to prevent such a development, but the companies that have not cooperated in the curtailment movement must take their part of the burden.

Should curtailment be abandoned, which appears doubtful, the small refiners would market a large amount of gasoline at a low price for a short time, but they could not dispose of heavier products.

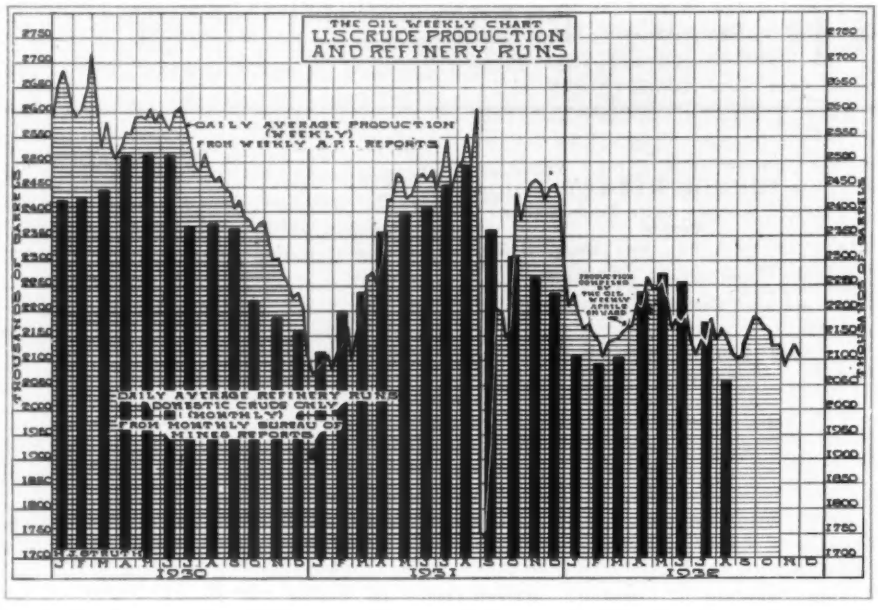
A very low crude price might return the crude output to the correct level, but all companies suffer alike from reductions. Flagrant violation of crtailment regulations could start friction which would lead to serious trouble.

The fact that the independent operators do not carry much storage in California has been to their advantage. The major purchasers have been buying the full allowable to maintain an open market, but the independents have been carrying little of the burden of storage. Two or three companies have been carrying the bulk of the stocks while purchasing a large percentage of the oil produced by independents. Now that the demand is hardly less than the supply, these few companies are seeking relief from the heavy burden.

Much of the oil carried in storage now was produced by the independent and sold to the major purchasers at a high price.

Jobbers Continue Program Of Hand-to-Mouth Buying

JOBBERS of Mid-Continent refinery gasolines continued to buy only for their immediate needs and although prices which had existed during the preceding week held steady, trading was extremely light. Factors which had induced the sluggish condition in U S motor fuel had not changed to any extent except perhaps for the influence that a return of pleasant weather might have had. This was true of all grades but especially so in the low octane materials for which there was practically no demand. Temperatures remained low enough to encourage the continued heavy demand for natural gasolines and as a result the lower vapor tension grades were noticeably scarce at the end of the week. Refiners in general reported sold ahead on the



41-43 gravity kerosenes and prices appeared to have been boosted an average of ⅛ cent per gallon. Heavy buying was noted among the tank wagon distributors of the various grades of domestic furnace and heating oils, indicating that this product is being used for blending purposes.

Based on group 3, ruling prices, exclusive of the one cent Federal tax, appeared to be as follows:

Refinery Gasolines: Low octane US motor, 3¾ to 4 cents; middle octance, 3⅞ to 4⅛ cents; high octane, 4¼ to 4⅜ cents; 60-62, 400 e.p., 4⅛ to 4¼ cents; 64-66, 390 e.p., 4¼ to 4⅜ cents; 64-66, 375 e.p., 4⅜ to 4½ cents; and 68-70, 360 e.p., 4½ to 4¾ cents per gallon.

Natural Gasolines: The 76-80 gravity, 10 to 15 pound vapor grade, 4½ to 4¾ cents; 15 to 18 pound vapor, 3¼ to 3½ cents; 20-24 pound vapor, 3 to 3¼ cents; and 24-26 pound vapor, 2⅝ to 2¾ cents.

Kerosenes: The 41-43 gravity, water white, 3½ to 3¾ cents; 42-44 gravity, water white, 3⅜ to 3⅞ cents; and 44-46 gravity, 4¼ to 4½ cents.

San Angelo.—Coltex Refinery Company owner of a 10,000-barrel refinery at Colorado, Texas, reduced its crude price from 75 cents to 65 cents effective 7 a.m., November 22 on all purchases made in Mitchell, Scurry, Howard and Glasscock Counties aggregating about 6000 barrels daily. This concern is the first important crude buyer in Texas to revert back to the old price after having joined the price advance movement instituted by the Sun Oil Company, October 15.

Tidal Oil Company Enters Conroe Field As Buyer

Houston, Texas. — Tidal Refining Company entered the Conroe field, Montgomery County, as a crude oil purchaser November 23 after Tidal Oil Company, producing affiliate, had become a producer there a short time previously. The Tidal interests will operate a field gathering line, which will connect with a trunk line of The Texas Pipe Line Company leading from the East Texas field to Port Arthur.

The prices announced by the Tidal interests are the same as those of Humble Oil & Refining Company. Oil of 35 to 35.9 gravity is priced at 90 cents a barrel, and a two-cent differential is applied for higher grades up to a peak listing of $1 for oils of 40 gravity or higher. The Tidal price schedule was made retroactive to November 9.

Humble Reduces Crude Price In Mirando and Coast Area

Houston.—Humble Oil & Refining Company, which purchases at least four times as much crude oil in Texas as any other one company, has not only held to its position in refusing to meet the price increases posted October 15 by various other companies, but has countered by placing in effect decreased prices for certain South Texas and Gulf Coast oils.

Effective November 21 the company cut Mirando district crude 10 cents a barrel to a new posting of 70 cents. Late in the week Magnolia Petroleum Company and other purchasers buying in the district still retained their price of 90 cents per barrel, that price embodying a 10-cent increase placed in effect October 15. The Mirando district has considerable production from more than 1000 wells in Duval, Webb, Jim Hogg and Zapata Counties.

The new price schedule of Humble Oil & Refining Company lowers the postings for Gulf Coast crude under 25 gravity. Whereas the previous schedule listed all oils below 25 gravity at 80 cents, the new one lists 20 to 24.9 gravity oil at 70 cents, and oils below 20 gravity at 60 cents. The company's prices remain unchanged for the lighter oils, beginning with 25 to 25.9 gravity, which is 81 cents a barrel. Those grades are, however, 10 cents a barrel under the new prices placed in effect by most other purchasers October 15.

White Eagle Surveying Route for Gasoline Line

Tulsa, Okla., Nov. 25.—Although officials of the White Eagle Oil Corporation state that no definite decision has been made it is reported they have two surveying parties in the field on a proposed six-inch gasoline pipe line from the company's refinery at Augusta, Kansas to Kansas City and possibly to St. Louis.

North California Demand Is For Leases at Low Prices

San Francisco.—Leasing in the central and northern part of California shows a wider interest in promising wildcat districts than has been manifested for some time. Both major and independent companies have acquired scattered leases where drilling may be done during the next two years, but prices have been much lower than during the excitement of a few years ago. In a few instances, operators have backed away from leases which were offered at fancy prices, and the result has been the acquisition of large tracts at nominal sums. Interest in natural gas, and the hope that oil producing districts may be pushed toward the north have kept interest alive during very trying times.

Western Gulf Oil Company will drill a wildcat a short distance south of Watsonville, in Monterey County, after leasing around 3000 acres on what appears to be an anticline. A series of core holes were drilled last year. This district is a considerable distance west of the Sargent field and the test will be one of the

Crude Runs to Stills, Motor Fuel Stocks, Gas, and Fuel Oil Stocks and Cracked Gasoline Production, Week Ended November 19, 1932

(Figures in barrels of 42 gallons each)

DISTRICT	Daily Refining Capacity of Plants			Crude Runs to Stills		MOTOR FUEL STOCKS					Gas and Fuel Oil Stocks	Daily Charging Capacity of Cracking Units			Cracked Production Daily Average
	Potential Rate	Reporting Total	Reporting %	Daily Average	% Operated	(a) At Refineries	(b) Bulk Terminals	(b) In Transit	(c) Other M.F. Stocks	Total Motor Fuel		Potential Rate	Reporting Total	Reporting %	
East Coast	644,700	638,700	99.1	424,000	66.4	3,612,000	6,623,000	1,373,000	306,000	11,914,000	9,290,000	344,400	326,400	94.8	90,000
Appalachian	144,700	137,500	95.0	87,000	63.3	968,000	421,000	32,000	216,000	1,637,000	760,000	59,100	57,600	97.5	26,000
Ind., Ill., Ky	434,900	424,000	97.5	280,000	66.0	2,768,000	3,078,000	64,000	165,000	6,075,000	4,040,000	341,400	328,200	96.1	79,000
Okla., Kans., Mo	459,300	405,800	88.4	196,000	48.3	2,861,000	797,000	.....	855,000	4,513,000	3,011,000	257,400	238,100	92.5	47,000
Inland Texas	315,300	212,700	67.5	102,000	48.0	1,027 000	99,000	.....	207,000	1,333,000	2,133,000	117,300	95,100	81.1	23,000
Texas Gulf	555,000	545,000	98.2	406,000	74.5	5,114,000	123,000	45,000	214,000	5,496,000	9,488,000	506,500	495,500	97.8	88,000
Louisiana Gulf	146,000	142,000	97.3	88,000	62.0	1,075,000	97,000	.....	33,000	1,205,000	3,455,000	74,400	74,400	100.0	19,000
North La.,—Ark	89,300	84,500	94.6	48,000	56.8	133,000	20,000	11,000	54,000	218,000	514,000	29,500	25,500	86.4	10,000
Rocky Mountain	152,000	139,000	91.4	33,000	23.7	1,086,000	.....	.....	15,000	1,101,000	439,000	71,400	68,100	95.4	7,000
California	915,100	866,100	94.6	439,000	50.7	12,197,000	.....	.....	2,675,000	14,872,000	100,236,000	197,700	197,700	100.0	47,000
TOTALS WEEK: November 19, 1932	3,856,300	3,595,300	93.2	2,103,000	58.5	30,841,000	11,258,000	1,525,000	4,740,000	48,364,000	133,346,000	1,999,100	1,906,600	95.4	436,000
November 12, 1932	3,856,300	3,602,300	93.4	2,135,000	59.3	31,016,000	11,198.000	1,307,000	4,800,000	48,321,000	134,302,000	1,999,100	1,906,600	95.4	421,000
Below are set out estimates of Crude Runs to Stills and Motor Fuel Stocks on B. of M. Basis for Week Nov. 19, 1932 compared with certain Nov. 1931 Bureau figures.															
Estimate B. of M. basis Week Nov. 19, 1932				2,180,000	(d)	31,440,000		13,280,000	4,740,000	49,460,000					460,000
U. S. B. of M. November 1931 Figures:—					11/1	33,084,000		13,865,000	3,490,000	50,439,000					
November 1931 Daily Average Crude Runs				2,388,000	11/30	35,103,000		13,395,000	3,497,000	51,995,000					
														November 1931 Daily Average Cracked Prod	501,000

(a)Stocks at refineries, except in California district, which includes stocks of finished gasoline and engine distillate at refineries, at water terminals and at sales distributing stations and any amounts in transit thereto.
(b)By districts, East of California only. In California, bulk terminal and in transit stocks are included under "At Refineries" heading. See note (a)
(c)Estimated. Includes motor fuel in pipe lines and unblended natural gasoline at refineries and plants, also blended M. F. at plants.
(d)Estimated to permit comparison with A. P. I. Economics Report which is on Bureau of Mines basis.

most interesting drilled in central California in some time.

The Texas Company recently leased around 8000 acres on the Hooker Hills structure, in Tehama County, but no immediate plans for drilling have been drawn. The leases are to run 10 years, and the rental will not exceed 25 cents per acre per year. Several wells have been drilled in the district.

John F. Oliver has made location for a well on Section 20-15-18, near Raisin City in Fresno County. Other operators are aiding Oliver. Several wells have been drilled in the immediate area.

Comparison of Permits Granted for New Wells

	For week ending Nov. 26	Total this month	Total this year	Total this date last year	1931 year total
Arkansas	1	3	24	34	34
California	3	17	317	326	342
Louisiana	14	51	397	290	309
Kansas	11	52	392	415	475
Michigan	9	15	168	95	110
Oklahoma	32	137	915	750	842
Texas	185	599	6340	6229	6981
Total	255	874	8553	8139	9093

Jacob Pool Northeast Side Apparently Defined

San Antonio, Texas.—The northeastern side of the Jacob pool, McMullen County, apparently was defined during the week when Jacob, Buzzini & Pickett, Inc.'s Jacob 8-A, 1980 feet northeast of No. 7-A, tested salt water and oil in the sand from 953-99 feet. It is drilling ahead below 1000 feet.

The company spudded Jacob 10-A, which is in the southeastern portion of the field.

Gulf Drilling Big Tract At Watsonville After Cores

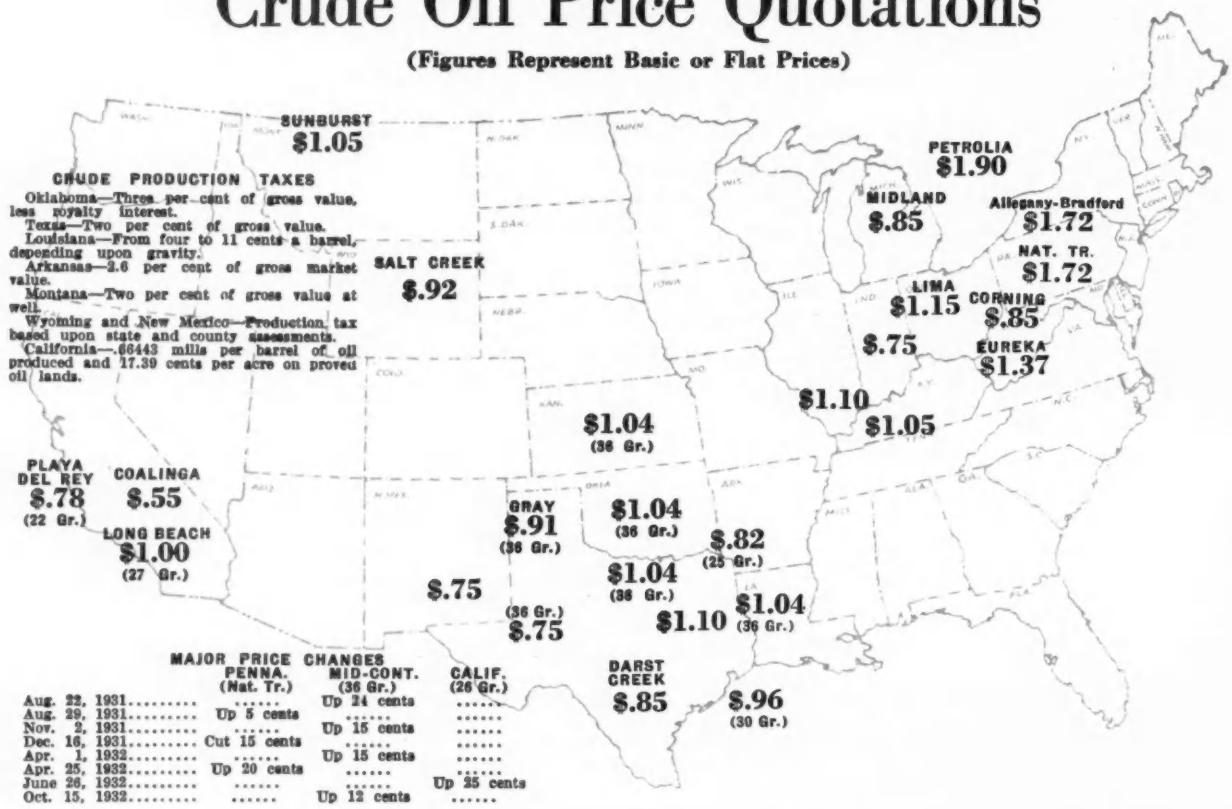
San Francisco.—Recent interest in the Watsonville district is based on the theory that the lower Pliocene or the Miocene shale may prove productive. Major companies have recognized the possibilities of the area for some time, but only a limited amount of work has been done. Entry of Western Gulf Oil Company into the district a few weeks ago was prompted by the results of coring in shallow tests, and the belief that the recent deposits may yield commercial production. This company drilled nine core holes in the district, and was satisfied with the results. The company has around 11,000 acres under lease. The first well is located a short distance south of Watsonville, drilling to be done with the outfit which drilled Bradley 1, Santa Maria wildcat, to a record depth of 10,296 feet before abandonment.

Summarized Review of Week's Field Results

State—	Completions	Oil wells	Gas wells	Failures	Initial prod.
Arkansas	1			1	
California	6	5	1		1,600
Indiana	17	3	10	4	15
Kansas	8	6		2	1,720
Kentucky	1	1			10
Louisiana	9	3	2	4	2,575
Michigan	4	4			1,085
Montana	3	3			295
New Mexico	2	2			34,600
New York	6	6			23
Ohio	17	6	10	1	44
Oklahoma	19	11		8	4,090
Pennsylvania	25	22	2	1	65
Texas	186	146	5	35	397,460
West Virginia	8	2	3	3	40
Wyoming	2	2			200
Totals	314	222	33	59	443,832

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices)



MAJOR PRICE CHANGES

	PENNA. (Nat. Tr.)	MID-CONT. (36 Gr.)	CALIF. (26 Gr.)
Aug. 22, 1931	.....	Up 24 cents	.....
Aug. 29, 1931	Up 5 cents	.....	.....
Nov. 2, 1931	.....	Up 15 cents	.....
Dec. 16, 1931	Cut 15 cents	.....	.....
Apr. 1, 1932	.....	Up 15 cents	.....
Apr. 25, 1932	Up 20 cents	.....	.....
June 26, 1932	.....	.....	Up 25 cents
Oct. 15, 1932	.....	Up 12 cents	.....

Official Postings and Differentials *(Revised to November 25, 1932)*

CALIFORNIA: (Effective June 26, 1932).

Signal Hill, Seal Beach, Alamitos Heights, Huntington Beach, Olinda-Brea Canon, Torrance, and Richfield: 14 to 19.9 gravity 65 cents; 20-20.9 gravity 69 cents; 21 gravity 74 cents; 22 gravity 79 cents; 23 gravity 84 cents; 24 gravity 89 cents; 25-25.9 gravity 93 cents, top posting for Torrance and Richfield; 26-26.9 gravity 97 cents, top price for Seal Beach, Alamitos Heights and Huntington Beach: 27-27.9 gravity $1.00; 28-28.9 gravity $1.03, the top price for Olinda Brea Canon; 29-29.9 gravity $1.06; and 30-30.9 gravity $1.09, the Signal Hill top posting.

Inglewood: 14 to 19.9 gravity 65 cents; 20-20.9 gravity 71 cents; 21 gravity 77 cents; 22 gravity 82 cents; 23 gravity 87 cents; 24-24.9 gravity 92 cents, the top price.

Playa Del Rey: 14 to 19.9 gravity 65 cents; 20-20.9 gravity 69 cents; 21 gravity 74 cents; 22 gravity 78 cents; 23 gravity 82 cents; 24 gravity 86 cents; 25 gravity 91 cents; 26-26.9 gravity 96 cents, the top price. Field gathering charges of 5 cents a barrel.

Athens, Rosecrans and Dominguez: 24-24.9 gravity 89 cents; 25-25.9 gravity 93 cents; 26 gravity 97 cents; and 27-27.9 gravity $1.00 with three cents additional for each degree gravity upward, ending at 32-32.9 gravity $1.15.

Elwood Terrace: 33-33.9 gravity $1.04 and 6 cents more for each additional degree of gravity, ending with 37-37.9 gravity $1.28, all prices f.o.b. ship.

Whittier and LaHabra: 14 to 19.9 gravity 65 cents; 20-20.9 gravity 68 cents; 21 gravity 72 cents; 22 gravity 77 cents; 23 gravity 83 cents; and 24-24.9 gravity 89 cents, the top price.

Montebello: 14 to 20.9 gravity 65 cents; 21-21.9 gravity 67 cents; 22 gravity 70 cents; 23 gravity 73 cents; 24 gravity 76 cents; 25-25.9 gravity 80 cents, the top price.

Coyote Hills: 14 to 20.9 gravity 65 cents; 21-21.9 gravity 66 cents; 22 gravity 70 cents; 23 gravity 76 cents; 24 gravity 81 cents; 25 gravity 86 cents; 26 gravity 90 cents; 27 gravity 94 cents; 28 gravity 98 cents; 29 gravity $1.02; and 30-30.9 gravity, $1.05, the top price.

Santa Fe Springs: 24-24.9 gravity 73 cents; 25 gravity 79 cents; 26 gravity 84 cents; 27 gravity 89 cents; and 28-28.9 gravity 94 cents, with 4-cent differential for each degree of gravity upward to 35-35.9 gravity $1.22.

Newhall, McKittrick and Kern River: 14 to 19.9 gravity 55 cents.

Midway-Sunset, Elk Hills and Buena Vista: 14 to 19.9 gravity 55 cents; 20-20.9 gravity 59 cents; 21 gravity 63 cents; 22 gravity 69 cents; 23 gravity 75 cents; 24 gravity 81 cents; 25-25.9 gravity 87 cents and 5-cent differential for each additional degree gravity ending with 30-30.9 gravity $1.12.

Lost Hills: Same as Midway-Sunset up through 25-25.9 gravity 87 cents, then 26-26.9 gravity 91 cents; 27 gravity 94 cents; 28 gravity 99 cents; 29 gravity $1.02; and ending 30-30.9 gravity $1.05.

Coalinga: 14 to 19.9 gravity 55 cents; 20-20.9 gravity 59 cents; 21 gravity 62 cents; 22 gravity 65 cents; 23 gravity 68 cents; 24 gravity 72 cents; and ending 25-25.9 gravity 75 cents.

Wheeler Ridge: 14 to 19.9 gravity 55 cents; 20-20.9 gravity 57 cents; and 21-21.9 gravity 60 cents, with 3 cents more for each additional degree of gravity, ending 25-25.9 gravity 72 cents.

Oklahoma, Kansas, North Texas: (Effective October 15, 1932).

Below 28 gravity (Magnolia) 79 cents; below 29 gravity (others) 88 cents with differential of 2 cents for each degree to 40 gravity and above which is posted at $1.12.

North Texas: (Effective October 15, 1932).

Below 28 gravity (Magnolia) 79 cents; below 29 gravity (others) 88 cents, with two-cent differential upward, ending 40 gravity and above, $1.12.

Texas Panhandle: (Effective October 15, 1932).

Gray County: Below 35 gravity: 87 cents, with differential of 2 cents for each degree to 40 gravity and above, 99 cents.

Carson and Hutchinson Counties: Below 35 gravity: 75 cents with differential of 2 cents for each degree to 40 gravity and above which is posted at 87 cents.

West Texas: (Effective October 15, 1932).

Crane-Upton, Crockett, Ector, Howard-Glasscock, Pecos and Winkler Counties, Texas and Lea County, New Mexico: 75 cents.

Southwest Texas: (Effective October 15, 1932).

Refugio Heavy: 80 cents.

Refugio Light: (Same as Gulf Coast—see below).

Gulf Coast: (Effective October 15, 1932).

Goose Creek, Hull, Liberty, Orange, Pierce Junction, Mykawa, Moss Bluff, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugarland, West Columbia, Humble and Refugio Light: Below 25 gravity: 90 cents, with differential of 1 cent for each degree to 36 gravity which is $1.02 then 2 cent differential to 40 and above which is $1.10.

Mirando: 90 cents; **Salt Flat:** 85 cents; **Darst Creek:** 85 cents; **Pettus:** $1.00; **Markham:** Same as Gulf Coast.

Conroe, Texas: (Effective July 18, 1932).

Two-cent differential applies, beginning 35-35.9 gravity, 90 cents, ending 40 gravity and above, $1.

East Texas: (Effective October 15, 1932).

Flat Price: $1.10.

North Louisiana and Arkansas: (Effective October 15, 1932).

Caddo, Homer, Haynesville, Bull Bayou, Sabine, Cricton, DeSoto, El Dorado, Cotton Valley, Sarepta, Cartersville: Below 25 gravity 80 cents with differential of 2 cents for each degree beginning with 25 gravity and ending with 40 and above. Top price $1.12 a barrel.

Smackover: 75 cents.

Rocky Mountain States: (Effective June 1, 1932).

Salt Creek: Below 29 gravity 76 cents; 29-29.9 gravity 78 cents with differential of 2 cents each degree to 40 and above. Top price $1.00.

Elk Basin and Grass Creek: $1.10; **Big Muddy:** 98 cents; **Lance Creek:** $1.15; **Rock Creek:** 90 cents; **Sunburst:** $1.05; **Osage:** 98 cents; **Cat Creek:** $1.20; **Pondera:** 90 cents; **Hogback, New Mexico:** 80 cents.

Mid-Western States: (Effective April 11, 1932).

Lima: $1.15; **Indiana:** 75 cents; **Illinois:** $1.10; **Princeton:** $1.10; **Wooster:** $1.25; **Western Kentucky:** $1.05.

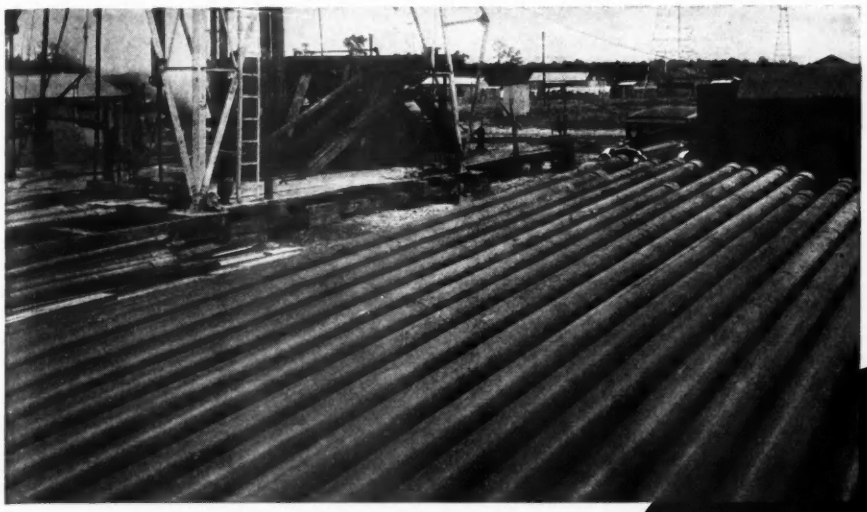
Pennsylvania: (Effective October 3, 1932).

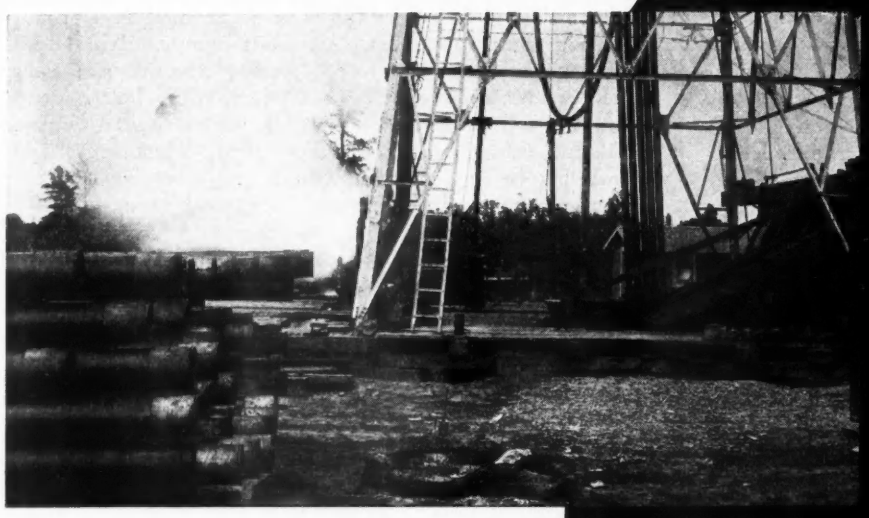
Bradford District: $1.72; **National Transit Oil:** $1.72; **Southwest Pennsylvania Pipe Line Oil:** $1.42; **Eureka Pipe Line Oil:** $1.37; **Buckeye Pipe Line Oil:** $1.22; **Corning Crude:** 85 cents.

Michigan: (Effective July 13, 1932), **Midland:** 85 cents a barrel. **Muskegon:** 76 cents to $1.00 a barrel.

Canada: (Effective Nov. 3, 1931).

Petrolia: $1.90; **Oil Springs:** $1.97.





Illustrations show another well of the Arkansas Fuel Oil Co. —Harrison "A" No. 3, near Gladewater, Texas, in which Republic Electric Weld Casing was used.

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Gulf Coast *Has 34 Fields Producing* Below 5000 Feet

JACK LOGAN
Staff Representative

THIS article, the second in a series on deep drilling along the Gulf Coast, is an elaboration upon facts given in the opening article (November 14, 1932, Page 53). Whereas the previous installment embodied a tabulation of deep fields and formations from which they produce, this article takes those fields up individually and shows the extent and commercial importance of the deep production in each, including details on particularly interesting deep wells in those fields. Information is also given on the various shallower fields and unproductive prospects which have had important deep showings of oil or gas.

The next installment will not be limited to deep exploration which has resulted in finding production or showings. It will take cognizance also of dry holes in showing the amount of deep drilling which has been done and the depths which have been reached. Wells which have gone to exceptionally great depths will be tabulated.

AS indicated in the first article of this series on deep drilling along the Texas-Louisiana Gulf Coast, and as shown in an accompanying table, there are 34 fields in the coastal region in which wells have been completed as oil or gas producers at depths greater than 5000 feet. Of those deep fields 25 are in the Texas division, including 19 within the regular salt dome country and six lying somewhat farther to the southwest, beyond the limits of the main salt dome region. The remaining nine deep fields are in Louisiana.

It is the purpose of this article to show in detail the extent and commercial importance of the deep production in each of those 34 fields. Information will also be included, moreover, on the various shallower fields and unproductive prospects which have had important showings of oil or gas at depths exceeding 5000 feet.

Among the 25 deep fields of the Texas division of the Gulf Coast there are at least eight which have already demonstrated rather conclusively the commercial importance of their producing horizons found below 5000 feet. They are Barbers Hill, Humble, Rabb Ridge, Conroe, Spindle Top, Pierce Junction, and High Island, all in the eastern portion of the Texas coastal country, and Refugio, farther west, in the trans-salt dome region. Because of their prominence as deep producing areas, those eight fields will be discussed first.

Barbers Hill

Barbers Hill was a dismal failure as a shallow field, but it has finally emerged as one of the most important of the coastal fields following the discovery in 1928 of prolific production around 5000 feet. Prior to that deep-oil discovery the field had produced only about 1,500,000 barrels of oil. Since then it has yielded about 26,000,000 barrels, the greater portion of which has come from depths in excess of 5000 feet. While the bulk of Barbers Hill production has come from about 225 wells completed in Middle Oligocene sands at 4600 to 5800 feet, production was found recently immediately below 6000 feet, while half a dozen good wells have been completed in sands logged between 6320 and 6690 feet, among them being Humphreys Corporation's (now Texas Gulf Producing Company's) Kirby A-8, west flank well which was completed January 4, 1930, at 6416 feet, and which has produced nearly 1,000,000 barrels of oil. The same company's Scott 2, north flank test, produced a little oil by swabbing and by pumping in the summer of 1930 from total depth of 7296 feet, and it thereby yielded the deepest production which has ever been obtained in the field. The well was not of commercial calibre, however, and was soon deepened to 7696 feet and abandoned in heaving shale.

In view of the small production obtained from the above 7296-foot well, the distinction of being the deepest productive well at Barbers Hill should perhaps be accorded Yount-Lee Oil Company's Zadie Fisher 1, west flank well, drilled originally to 6929 feet but plugged back and completed in May, 1930, as a 2000-barrel producer at 6690 feet. Barbers Hill has had 24 wells drilled below 6000 feet, those aside from the mentioned producers including wells ultimately plugged back to shallower producing horizons or abandoned. The deepest test which has been drilled there was Yount-Lee Oil Company's Chambers County Agricultural Association 4, abandoned in September, 1929, in heaving shale at 8150 feet.

Humble Dome

Humble dome is one of the two fields of the Gulf Coast which have over 100,000,000 barrels recovery each to their credit, the other being Spindle Top. It had declined in output to little more than half a million barrels a year when it was revived through discovery of deep production around its flanks early in 1929. During the period of less than four years since then the field has produced over 14,000,000 barrels, of which a high proportion has been from around 5000 feet.

Conroe

Conroe is an important, new, flush field, discovered late in 1931. It has not yet been established whether the field is a salt dome or a domal anticline like Raccoon Bend, but it is apparently destined to have a large productive area, with numerous good wells. There are now over 25 completed wells, producing from the Cockfield zone of the Claiborne series of Eocene beds at depths of 4981 to 5233 feet.

Rabb Ridge

Rabb Ridge is likewise a relatively new field, having been discovered in May, 1931, and it is expected to prove one

TABLE 1

Fields in Which Wells Have Been Completed as Producers Below 5000 Feet

Texas: Salt Dome Region

Field and County—	Maximum producing depth: feet
1. Buckeye, Matagorda County	7926
2. Esperson, Liberty County	7624
3. Manvel, Brazoria County	7590
4. Barbers Hill, Chambers County	7296
5. Big Hill, Jefferson County	5958
6. High Island, Galveston County	5911
7. Goose Creek, Harris County	5894
8. Spindle Top, Jefferson County	5879
9. Moss Bluff, Liberty County	5860
10. Nash, Fort Bend-Brazoria Counties	5677
11. Humble, Harris County	5670
12. Fannett, Jefferson County	5660
13. Allen, Brazoria County	5584
14. Pierce Junction, Harris County	5566
15. Hull, Liberty County	5450
16. Rabb Ridge, Fort Bend County	5414
17. Orange, Orange County	5303
18. Conroe, Montgomery County	5233
19. North Dayton, Liberty County	5188

Texas: Trans-Salt Dome Region

1. Refugio, Refugio County	6650
2. Nursery, Victoria County	6470
3. Keeran, Victoria County	5851
4. Marianna, Victoria-Refugio Counties	5832
5. Gulf-O'Connor, Refugio County	5707
6. Lucas, Live Oak County	5277

Louisiana Gulf Coast

1. Jennings, Acadia Parish	7447
2. Sweet Lake, Cameron Parish	7387
3. Iowa, Calcasieu-Jefferson Davis Parishes	6983
4. Lockport, Calcasieu Parish	6668
5. Black Bayou, Cameron Parish	6638
6. East Hackberry, Cameron Parish	6003
7. White Castle, Iberville Parish	5836
8. Sulphur, Calcasieu Parish	5705
9. Cameron Meadows, Cameron Parish	5273

of the most productive of all the coastal fields, as evidenced by the fact that a leading major company in the spring of 1932 agreed to pay $20,000,000 for a one-half interest in a lease block covering most of the productive area there. Production is coming largely from Middle Oligocene sand which has been logged from 4985 to 5414 feet by more than 30 well which have been drilled there.

Spindle Top

Spindle Top, distinguished not only as the first of the salt dome fields, but also as the most productive, with about 118,000,000 barrels to its credit, had produced less than half that amount by 1925, when its shallow production had virtually reached exhaustion. In that year, however, the field was rejuvenated by discovery of deep, flank production, and it became once again the premier salt dome field. Numerous prolific wells were brought below 5000 feet.

Pierce Junction

Pierce Junction does not rank along with the above mentioned important deep fields in volume of oil produced from the deep horizons. It has had a considerable number of good wells, however, which were completed below 5000 feet, and has demonstrated its capacity for furnishing important deep production when called upon to do so.

High Island

Like Pierce Junction, the High Island field does not rank high as yet in actual crude oil recovery from below 5000 feet, but it has similarly demonstrated important potentialities for deep production, over 15 oil wells with relatively high initial production having been completed in the field already at depths of 5000 to 5900 feet, a considerable proportion of them this year. Somewhat over a year ago the field passed largely into the hands of Yount-Lee Oil Company, which discovered deep flank sands at Sour Lake, Spindle Top, and Jennings, and which has the reputation of being among the most aggressive of all coastal operators in developing deep production. Under development by that company High Island has assumed a fairly important position among coastal producing areas. At the middle of October the field was producing around 5000 barrels daily, and production for 1932 had amounted to almost 1,000,000 barrels. Prior to 1932, when development of deep production was begun in earnest, the field had yielded only about 1,500,000 barrels over a period of approximately a decade.

Refugio

The Refugio field, located southwestward along the coast from the limits of the regular salt dome country, has proved to be an outstanding deep field, with three important producing horizons below 5000 feet. Numerous good oil wells were completed around 5500 feet and around 5800 feet, and a horizon of even greater importance has been developed around 6500 feet. First oil production at Refugio was heavy oil at 3700 feet discovered in July, 1928, and it was not until September, 1929, that the 5500-foot sand was discovered, the other two deeper horizons being found even later. Those deep sands all yield oil of higher gravity than the shallower horizon. By the end of 1931 Refugio heavy oil production had amounted to 16,000,000 barrels, and the light oil to more than 7,000,000 barrels. In addition the field has produced during 1932 about 3,000,000 barrels of heavy and light oil combined, and at the middle of October was yielding around 9000 barrels daily, with the deep horizons contributing more than the shallow. For the year 1931 light oil production had amounted to roughly 5,000,000 barrels as against a little less than 4,500,000 barrels of heavy oil

Less Prominent Deep Fields

The remaining 17 fields of the Texas Gulf Coast which have yielded production below 5000 feet are of lesser importance than the above eight as judged by actual oil recovered. While the smaller output has been due in a few instances to discouraging results attending efforts to expand deep production, it is due in more instances to very limited deep drilling having taken place as yet.

Buckeye

Thus at Buckeye there is only one producing well, the deepest along the whole Gulf Coast, but it is the only one that has been drilled there. It started as a wildcat, and was the discovery well of a new field. That well is United North & South Development Company's Stoddard 1, located in Buckeye townsite, and completed September 13, 1932, at 7808-7926 feet for initial of 1860 barrels of 39 gravity oil daily.

Manvel

The extent of production established at Manvel has been completion of one Miocene sand oil well at 3985-4009 feet, two Oligocene sand oil wells completed between 5460 and 5685 feet, and a test which was not commercially productive although proving the presence of gas in the McElroy zone of the Jackson formation at 7470-7590 feet. Those four wells, however, all drilled by The Texas Company, constitute the full extent of drilling that has been done in the field, which was found through geophysical work.

Esperson

As indicated in the accompanying table showing productive horizons in the various deep coastal fields, five tests have been completed at Esperson as gas wells or small

TABLE 2

"Shallow" Fields Which Have Had Showings Below 5000 Feet

As against the 34 fields of the Texas-Louisiana Gulf Coast in which wells have been completed as oil or gas producers below 5000 feet, there are 50 other established fields which have produced only from depths less than 5000 feet. Among those 50 shallower fields, however, there are at least 10 which have had important oil or gas showings below 5000 feet. They are listed herewith.

Texas Gulf Coast

1. Orchard: 6756 Feet—

Gulf Production Company's Moore 19, Orchard dome, late in 1929 had a showing of oil at 6756 feet, but was junked and abandoned at that level, the greatest depth which has been reached in this Fort Bend County field.

2. Port Neches: 6050 Feet—

The Texas Company's Stark 2 at Port Neches, Orange County, had an oil showing at 5425 feet late in 1930, and Gulf Production Company's W. H. Stark 1 had an oil show at 6050 feet, although it was abandoned late in 1930 at 6988 feet, the greatest depth which has been reached in this field, where, incidentally, no test has encountered cap rock or salt.

3. Hankamer: 6044 Feet—

Two deep tests drilled in 1930 and 1931 by Gulf Production Company in southern Liberty County adjacent to the present Hankamer oil field had oil showings at 6044 feet, 5808 feet, and 5402 feet, as well as at shallower horizons. Those wells were Weiser 1 and Ezzell 1.

4. Mykawa: 5740 Feet—

Humble Oil & Refining Company's Minnetex 3, Mykawa field, Harris County, flowed salt water in testing sand at 5445-5490 feet which had given showing of oil, and was abandoned early in 1929 at 5811 feet. The same company's Siadous 1 had a slight oil show at 5740 feet, prior to abandonment in the summer of 1930 at 5900 feet.

Louisiana Gulf Coast

1. Gueydan: 6400 Feet—

Pure Oil Company's Alliance Trust Company 1 at Gueydan dome, Vermilion Parish, Section 34-11s-1w, had oil shows in hard sand above cap rock from 6000 to 6400 feet in August, 1931.

2. Bayou Blue: 5705 Feet—

Standard Oil Company of Louisiana's E. B. & S. P. Schwing 1-A at Bayou Blue dome, Iberville Parish, Section 73-9s-10e, had oil shows at 5365-5373 feet and at 5701-5705 feet before being abandoned in April, 1931, at 6007 feet.

3. Hackberry: 5660 Feet—

At Hackberry dome, Cameron Parish, one well had an oil showing at 5660 feet, and further promise of commercial deep production is given through the fact that East Hackberry dome, only a few miles to the east, has two prolific wells producing from around 6000 feet.

4. Bay St. Elaine: 5328 Feet—

The Texas Company's Bay St. Elaine 4, Bay St. Elaine dome, Terrebonne Parish, Section 17-22s-18e, swabbed 27 gravity oil at the rate of 75 barrels daily along with salt water at 5174-5186 feet, and later blew out at 5328 feet before being abandoned at 5600 feet in August, 1930.

5. Leesville: 5275 Feet—

The Texas Company's L. L. E.-Leesville 1, Leesville field, LaFourche Parish, Section 27-21s-22e, cored oil sand at 5260-5275 feet, but mechanical difficulty necessitated sidetracking, and the well was finally abandoned in November, 1930.

6. Lake Washington: 5152 Feet—

Humble Oil & Refining Company's Lake Washington 1 at Lake Washington dome, Plaquemines Parish, Township 20 south, Range 26 east, by bailing yielded a little heavy oil at 5137-5152 feet before being finally abandoned in August, 1930, at 5440 feet.

producers of high gravity oil in four separate horizons between 5707 and 7624 feet. None of those deep wells proved commercially profitable, however, and all the field's commercial production has been from depths less than 5000 feet. Nevertheless, the deep sands have been tested only slightly, and their possibilities have been only glimpsed. The deep exploration at Esperson has been done by Cranfill-Reynolds Company and Yount-Lee Oil Company.

Big Hill, Jefferson

Big Hill dome in Jefferson County is included among the deep fields because of completion of one well as a gas producer and showings in two other deep tests. These three wells, all drilled by The Texas Company, have been the only tests in the field drilled below 5000 feet. Pipkin 1 was completed in June, 1929, as a gas well in sand logged from 5900 to 5958 feet, showing 2000 pounds closed in pressure. Two other tests had important showings of gas around the same level. The only oil production in the field has been small output from several wells not quite 2000 feet deep.

Goose Creek

Goose Creek, like Big Hill, has been included among the deep fields largely on the strength of the performance of one well, Humble Oil & Refining Company's Simms-Smith 73, which came in about May 15, 1928, flowing 1000 barrels of oil daily from 5894 feet. The well succeeded in maintaining its flow for only a very brief period, however, and it was deepened and abandoned at 6245 feet late in the following August. Another Goose Creek deep test, J. M. West's Scorrega 1, early in 1930 tested an oil-showing sand at 5081 feet but developed salt water flow and was abandoned.

Moss Bluff

From the standpoint of actual production, Moss Bluff dome is relatively unimportant, having yielded only a few thousands of barrels of oil. Since half a dozen wells have been brought in as fair flowing producers from sands found between 5500 and 5860 feet, however, the dome has demonstrated rather clearly the importance of its possibilities. Those wells, incidentally, were all within a small area on the southeast flank of the dome, and aside from them, very little deep exploration has been carried out at Moss Bluff. In addition to the small proven area on that one flank similar possibilities exist all the way around the dome.

Nash Dome

Nash dome has not proved profitable as a shallow field, having yielded less than 2,000,000 barrels of oil in seven years. Nor have the rather extensive deep drilling efforts proved particularly successful, despite completion of several oil wells around or below 5000 feet.

Fannett

Although within the fifth year of its production history, Fannett has yielded a little less than 1,000,000 barrels of oil, counting shallower production along with more important, deeper oil developed within the past several years by about one half-dozen wells between 4850 and 5660 feet. Aside from those productive wells, however, very few other tests have been drilled in the field.

Allen Dome

All production at Allen dome has been from only about one half-dozen wells completed during the past six years in sands lying between 4346 and 5584 feet, and while some of those wells came in with relatively high initial production, none has amassed a production record of commercial calibre. The output of the field has been less than 100,000 barrels. While the field has thus far made a particularly

poor showing, however, it should be taken into consideration that about one out of every three wells drilled below 5000 feet has yielded oil production, although in limited quantity, less than a dozen tests other than the mentioned producers having been sunk below the 5000-foot level. Furthermore, the only tests which have gone below the maximum producing depth of 5584 feet were one drilled to 5837 feet and another to 5960 feet, the latter being the deepest test of the field.

Hull Dome

Hull has proven highly profitable through relatively shallow wells, being among the most productive of the coastal fields, with recovery of over 70,000,000 barrels to its credit since discovery in 1918, and efforts toward establishing production below 5000 feet have been very limited. Such production has been established, nevertheless, in several wells, and the field may reasonably be expected to furnish additional important deep production in the future as the shallower production declines.

Orange Field

Like Goose Creek and several other coastal fields, the Orange oil field has never furnished any wells which drilled into cap rock or salt to prove definitely the presence beneath it of a salt dome. Yet like the others it is commonly regarded as being over a very deep-seated salt mass. Being such a deep-dome type field, its possibilities for undiscovered deep producing horizons should be good. In fact, while most of its oil output of over 30,000,000 barrels has come from shallower horizons, it has in the past yielded limited production through several wells from sands lying between 5000 and 5303 feet.

North Dayton

In the 28 years since completion of the first oil well there, North Dayton dome has produced a little less than 2,000,000 barrels of oil, counting both shallow and deep production. About one half-dozen wells have been completed below 5000 feet as oil producers during the past several years, along with some important wells ranging in depth from 4000 to 5000 feet. It is significant that those deeper wells in the several years during which they have produced have yielded a combined oil output about equal to all the shallow production of the dome during nearly 30 years. While North Dayton deep wells have failed to amass very impressive production records, the wells which have proved productive below 5000 feet constitute nearly 50 per cent of all tests drilled so deep. Furthermore, the deepest of these deep tests only reached 5700 feet, and also they were concentrated largely on a single flank of the dome, leaving the other sides of the dome unexplored in the deep horizons.

Trans-Salt Dome Fields

The remaining Texas Gulf Coast areas which have had wells proving productive below 5000 feet are five, located, like Refugio, somewhat southwestward beyond the end of the regular salt dome region. They are Nursery, Keeran, Marianna, Gulf-O'Connor, and Lucas.

Nursery

Nursery has furnished several shallow gas wells, and it is included here among the deep fields solely through performance of one well, Humble Oil & Refining Company's J. J. Welder 1, Day Land & Cattle Company Survey, Abstract 477. Early in 1930 it flowed a little 43 gravity oil along with considerable gas from 5750-5842 feet after being swabbed, and after being deepened later, it was bailed with screen set at 6284-6474 feet and thereby produced at the rate of 10 barrels of oil and 5,000,000 cubic feet of gas daily. The test was soon afterward abandoned, however, at the last named depth.

Keeran

Keeran is a new field, opened about February 1, 1932, through completion of Keeran 1 of Victoria Oil Company and Gulf Production Company, M. de Leon Survey, eastern Victoria County, as a gas well spraying considerable 46 gravity oil, showing 2250 pounds pressure on casing through a five eighths-inch choke and 2000 pounds on tubing which was restricted with a three eighths-inch choke, the producing horizon being at 5182-5191 feet. That well was the first drilled on a prospect which had been outlined through geophysical work. About August 10 a second test in the area also proved successful, being completed at 5841-5851 feet as the field's discovery oil well, flowing 37 gravity oil at the rate of 1000 barrels daily through half-inch choke, meanwhile registering 725 pounds working pressure. No

TABLE 3

Prospects Which Have Had Showings Below 5000 Feet

Among the numerous Gulf Coast prospects regarded as potential oil fields but not yet established as either known salt domes or producing areas, there are several which have had important oil or gas showings below 5000 feet. Among them are the following, all located within the Texas portion of the Gulf Coast region.

1. Hamshire: 7117 Feet—

On this geophysical prospect located in Jefferson County, about two miles north of Hamshire, Shell Petroleum Corporation's C. T. Heisig 1, T.&N.O. Survey, Section 86, had a slight oil show at 7117 feet as well as one around 5000 feet. It was abandoned in shale at 7305 feet in October, 1930.

2. Needville: 6889 Feet—

A wildcat, Hartfield 1, drilled by Cullen & West and Meyer & SoRelle on the Needville geophysical prospect, Fort Bend County, H.&T.C. Survey No. 25, tried to blow out from sand at 6470 feet, and later at 6889 feet tested salt water with a showing of oil. It had also had an oil showing around 5000 feet. Following the test at 6889 feet the well was abandoned at that depth in April, 1929.

3. Cheek: 6378 Feet—

Jack Schultz's wildcat, O. M. Todd 1, on the Cheek geophysical prospect, southwest of Beaumont, Jefferson County, had numerous showings, including oil sands encountered at 6378 feet and at 5596 feet, several between 5400 and 5500 feet and around 5200 feet, and others at 4162 and 3375 feet. The test failed to develop commercial production, however, and was abandoned in June, 1932, in the lower part of the Marginulina zone at 6906 feet. Location of the well was in the William Carr Survey.

4. Citrus Grove: 6250 Feet—

Empire Gas & Fuel Company's Boker 1, J. J. Criswell Survey, Matagorda County, drilled on the Citrus Grove prospect following geophysical work, blew out while drilling gas sand logged at 6248-6250 feet. It was later deepened and abandoned in June, 1931, at 6460 feet.

5. Cedar Bayou: 5960 Feet—

Sloane Prospecting Company's Ulrich 1, south half of Hannah Nash Survey, Harris County, drilled on the Cedar Bayou prospect following geophysical work, had a slight oil-show at 5936-5960 feet as well as several showings between 4400 and 5000 feet. It was abandoned in May, 1930.

6. Sheppards Mott: 5244 Feet—

Cockburn Oil Corporation's Hawkins 2, Farnham Fry Survey, Matagorda County, wildcat on Sheppards Mott prospect, yielded a few barrels of 37 gravity oil from sand at 5216-5244 feet, but was not a commercial producer, and was finally abandoned in May, 1931, at 5244 feet.

other tests have been completed, although several are under way.

Marianna

The large Marianna field, spread across the Victoria-Refugio County line, is among the most interesting of the new producing areas of the trans-salt dome district. While at least four oil and gas producing horizons have been established between 2000 and 4500 feet, one well, The Texas Company's McFadden 3, John M. Rine Survey, Victoria County, at the opening of 1932 uncovered a sand of apparent importance below 5000 feet. Completed at 5828-5832 feet, it came in flowing about 1000 barrels of high gravity oil daily through one fourth-inch choke, registering 1000 pounds pressure. It failed to produce satisfactorily very long, however, and in deepening which was still in progress at the middle of October it had encountered another interesting horizon, testing five joints of 40 gravity oil and much gas in five minutes at 6225-6229 feet on drill stem test.

Gulf-O'Connor

The name Gulf-O'Connor is used here for convenience to designate a producing area recently discovered in northern Refugio County, about 10 miles north of Refugio field, between the latter and Marianna, and adjacent to the Goliad County line, by Gulf Production Company on the J. O'Connor ranch. Geophysical work led to the drilling first of a dry hole, O'Connor 1, located in Goliad County, and then of O'Connor 2 in Refugio County, which was completed late in September, 1932, as a gas well showing 2000 pounds pressure flowing through a choke in the tubing and rated as a 50,000,000-foot well.

Lucas Field

The Lucas field in Live Oak County has commercial gas production in wells 2000 to 2300 feet deep, but following discovery of oil at Pettus early in 1930, several wells were drilled at Lucas by Houston Oil Company, owner of virtually all proven leases there, in search of oil production in the Cockfield formation from which Pettus oil was coming. The first deep well, Ross Boothe 1, northeast of gas production, tested 48 gravity oil at 5252-5259 feet on a drill stem test, but mechanical difficulties prevented its successful completion. Early in 1931 a second test, Ross Boothe 1-A, was completed as a small oil producer at 5270-5277 feet. Only one other test has been drilled below 5000 feet at Lucas. It was Houston Oil Company's Cartwright 22, east of the proven gas area, which tried to blow out from 5419-5424 feet and later also from 5841-5850 feet, and which was finally abandoned at 6023 feet following a drill stem test at that depth.

Louisiana Deep Fields

Among the nine fields of the Louisiana division of the Gulf Coast which have proved productive below 5000 feet there is none which has as yet amassed an impressive record of deep production such as that of Barbers Hill or of Spindle Top or Humble on the Texas coast. Yet all of the Louisiana deep fields have made relatively good showings, even despite very limited deep exploration in most cases; and in fact there have not been any of the fields in Louisiana, as there have been in the Texas division of the coastal plain, which have offered discouragement against deep exploration. The Louisiana deep fields will be discussed in the order of the depths from which they have produced.

Jennings

Jennings is the leader in Louisiana in offering deep production, as it is also the leader from the standpoint of total oil production, having yielded nearly 50,000,000 barrels since oil was discovered there in 1901 shortly after Spindle Top ushered the salt dome region in as a source of petroleum.

While the bulk of Jennings production has come from sands above 5000 feet, the field has demonstrated important deep production possibilities through a group of wells drilled on its southeast flank by Yount-Lee Oil Company, and on other flanks by several other companies. Deep exploration has been in progress in the field about four years, and has involved the drilling of four tests to depths of 8000 to 8900 feet; for others which went below 7000 feet, and six aside from all those which went below 5000 feet, thus making a total of 14 tests below 5000 feet.

That deep drilling has resulted in establishing an important producing horizon between 7225 and 7447 feet, in which three oil wells were completed, and in proving the presence of a still deeper petroleum bearing horizon, in which two wells, testing at depths of 8613 to 8698 feet, showed oil and gas but not in commercial quantity.

The three deep producers from the 7200-7500-foot zone are all Yount-Lee Oil Company wells. The first to be completed was Houssiere-Latrielle 6, which came in about June 3, 1929, flowing 5000 barrels 30 gravity pipe line oil daily through one fourth and three sixteenths-inch chokes from sand at 7225-7290 feet. Six months later the well was still flowing 1200 barrels of oil daily. Next Houssiere-Latrielle 7 was completed early in 1930 as an oil well at 7412-7447 feet. It is distinguished as the deepest productive well of the field and also of the whole Louisiana Gulf Coast, although it showed considerable water along with the oil. No. 8 on the same lease was completed on June 14, 1930, at 7365-7420 feet, flowing 85 barrels 35 gravity oil per hour on two one fourth-inch chokes. Wells No. 9 and No. 10 on the Houssiere-Latrielle lease are the two which had the showings between 8613 and 8698 feet. No. 9 tried to blow out from 8613 feet and at 8666 feet did blow out, making oil and gas but later developing salt water flow. It was abandoned at 8900 feet, the deepest hole in the field, but only the second deepest for the Louisiana Gulf Coast, one at Sulphur dome being deeper. Houssiere-Latrielle 10 was abandoned at 8698 feet when it failed to flow from oil sand logged from 8676-8698 feet.

Sweet Lake

Sweet Lake is like Goose Creek, Orange, and some other fields of the Texas-Louisiana Gulf Coast in that no cap rock or salt has yet been encountered to prove definitely the presence of a salt dome. That is one reason why Sweet Lake offers particularly important deep production records and deep production possibilities. In fact, this field, located in the middle of a fresh water lake about seven or eight feet deep, is strictly a deep field, all production having been obtained between the depths of 4457 and 7387 feet.

While operating costs are naturally high because of the field's location in a lake as well as because of the depths involved, and although some of the wells have not had particularly good production records, the field has nevertheless had, as a whole, a rather favorable history. Among the encouraging circumstances is the exceptionally low percentage of unproductive tests drilled in developing. Magnolia Petroleum Company has drilled two unsuccessful tests below 7500 feet, but they were outside the established limits of the field. All operations in the field proper have been by Pure Oil Company, which has drilled in all 10 wells, all on the Yount-Lee Oil Company lease (formerly Sweet Lake Land & Development Company lease).

The first test by Pure Oil Company had a violent gas blowout late in 1926 from 4600 feet, a large crater resulting. Since that blowout nine wells have been drilled, and eight proved productive. Through original completions or in deepening operations these eight wells have produced from the following depths: 7387 feet, 6813 feet, 5924 feet, 5897 feet, 5718 feet, 5660 feet, 5657 feet, 5640 feet, 5120 feet, 4594 feet, and 4475 feet. The unproductive test was Yount-Lee 6, abandoned at 6262 feet. The deepest productive well was

Yount-Lee 10, which came in in May, 1931, flowing 1150 barrels daily at 7366-7387 feet. It is the deepest hole drilled in the area except the two by Magnolia Petroleum Company. The deepest of the two by that company was Sweet Lake Land Company 2, abandoned in the summer of 1931 at 7714 feet.

While some of the Sweet Lake wells have failed to maintain favorable production performance following completion, others have yielded large quantities of oil, outstanding among the latter group being Pure Oil Company's No. 5, which flowed 480,000 barrels of oil during the first 150 days following completion at 5718 feet, and which subsequently boosted its total yield considerably above one half million barrels.

Iowa Field

Iowa is strictly a deep field, discovered through geophysical prospecting, and incidentally constituting a monument to the value and accuracy of geophysics, that science having pictured the prospect as a very deep dome, which it evidently is, and also having pointed out its location so accurately that the first test drilled produced oil. The discovery well was Vacuum Oil Company's (now Magnolia Petroleum Company) Bert T. Waite 1, Section 12-9s-7w, Calcasieu Parish, completed originally January 30, 1931, in Miocene sand at 5001-5008 feet for initial production of 300 barrels 28 gravity pipe line oil daily through three eighths-inch choke, but later deepened and completed a second time in October, 1931, in Middle Oligocene sand at 6948-6971 feet for an initial flow of 3360 barrels of 41 gravity oil daily through half-inch and three eighths-inch chokes. Shell Petroleum Corporation offset the discovery well to the east by Fontenot 1, a producer at 6912 feet, and to the south by Heyd 2 (No. 1 never having been drilled), which was completed as an oil producer at 6983 feet, the greatest producing depth in the field. Those three wells constitute the full extent of completions in the field, but their production has been very satisfactory, and they have indicated that Iowa is a deep field of the first order, particularly in so far as the producing horizon below 6900 feet is concerned.

Lockport Field

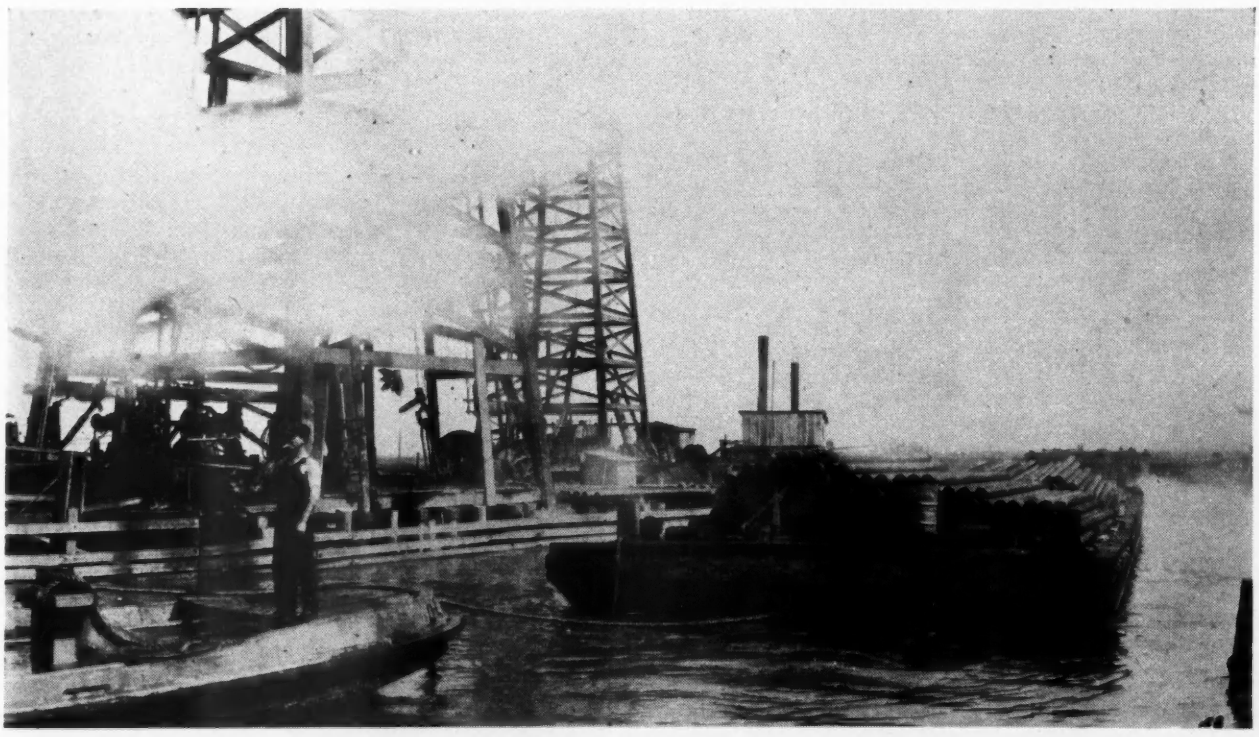
Lockport is like Sweet Lake and Iowa in that it is probably a very deep dome, no cap rock or salt having been encountered in any wells. Like them it is also established as a field with important deep producing horizons. Along with various sands between 2200 and 5000 feet, the field has several productive horizons between 5000 and 6668 feet. Over a dozen wells have been completed in sands between 5000 and 5667 feet, and several have been productive at depths of 6529 to 6668 feet. The latter depth represents the depth of Yount-Lee Oil Company's Miller 1, west edge well, which is the deepest producer in the field. It was completed in November, 1930, as a 600-barrel well.

Lockport ranks relatively high among coastal Louisiana fields in cumulative oil production, having about 11,000,000 barrels to its credit, although it did not begin producing until 1924. A considerable part of that total has come from around 5000 feet or deeper.

Marring Lockport's record as a deep field, however, is a rather high percentage of unproductive tests among those drilled below 5000 feet. Over 20 wells which have exceeded that depth have failed to produce. Among those unproductive tests, furthermore, were some very expensive ones, including three which were drilled below 7000 feet, and about eight others which exceeded 6000 feet. All operations at Lockport, as a matter of fact, are relatively expensive, since the field is located in a marsh, and roads and special foundations must be built in carrying out drilling and production activities. The field is largely under joint control of Magnolia Petroleum Company and Gulf Refining Company of Louisiana.

Black Bayou

Black Bayou dome has offered high encouragement in the limited amount of drilling which has been done below



Among the deep fields of the Louisiana Gulf Coast East Hackberry is a recent addition. This picture shows pipe being barged up a bayou which runs through the field.

5000 feet. Only four tests in the field have exceeded that depth, and three of them were completed as oil wells. The other was of such unusual nature, furthermore, that although it was unproductive, it cannot be classed as a typical deep drilling failure. For it went into salt at 4200 feet, and in the hope of drilling through a possible overhang, such as is found on the edges of Barbers Hill, Allen, and Vinton domes, it was carried in the salt to 6463 feet.

Of the three Black Bayou wells completed as producers below 5000 feet, the deepest was Brownie-Babbette Oil Company's R. A. Moore 1, south flank well which came in August 30, 1932, flowing 400 barrels 39 gravity oil daily through half-inch choke from sand at 6619-6638 feet. Farther to the north Shell Petroleum Corporation had previously completed two oil producers in sands logged between 5118 and 5263 feet.

East Hackberry

East Hackberry resembles Iowa and Black Bayou in that it is apparently a very important potential source of deep production, despite having had as yet only slight deep exploration. Ushered in as a producing area the latter part of 1927, it has proved an important field, yielding to now about 5,000,000 barrels. Practically all that production has been from a horizon around 3900 feet and from sands between 2600 and 3000 feet, and drilling below 5000 feet has been limited to only eight tests.

The deepest of those eight tests was Union Sulphur Company's No. 1 well, Gulf Land Company Fee tract, Pure Oil Company lease, which recently reached 8324 feet. At that level it logged sand with a showing of oil, but an unsuccessful drill stem fishing job prevented testing the sand, and the well was abandoned after sidetracking around 5000 feet and drilling in a new hole to 7423 feet. Five others of the eight deep tests were also unproductive, two going below 6000 feet, and three only below 5000 feet.

Two of the deep tests, on the other hand, were completed as oil producers. The first of the two was Union Sulphur Company's No. 1 Gulf Land Company Fee, Humble lease, which came in about March 20, 1932, flowing 1500 barrels 31 gravity pipe line oil daily through a three eighths-inch choke from sand at 5990-6001 feet. The well has proved a remarkably consistent, prolific producer. Six months following completion it was yielding a little more oil than it did originally, flowing 1525 barrels daily, still restricted with a three eighths-inch choke. This deep horizon was further proven about the middle of October, when Union Sulphur Company's No. 3 well on the same lease came in flowing 1400 barrels pipe line oil daily from sand at 5990-6003 feet. The two deep producers are in Section 11-12s-10w, Cameron Parish.

White Castle

White Castle is strictly a deep field, all production having come from below 5000 feet, and it is apparently destined to develop into an important producing area, judging by the favorable results already obtained despite very limited drilling. The field was found through geophysics, and has been established as a salt dome. Only five tests have been completed, all on the Wilbert lease, by Shell Petroleum Corporation, which largely controls the promising acreage there.

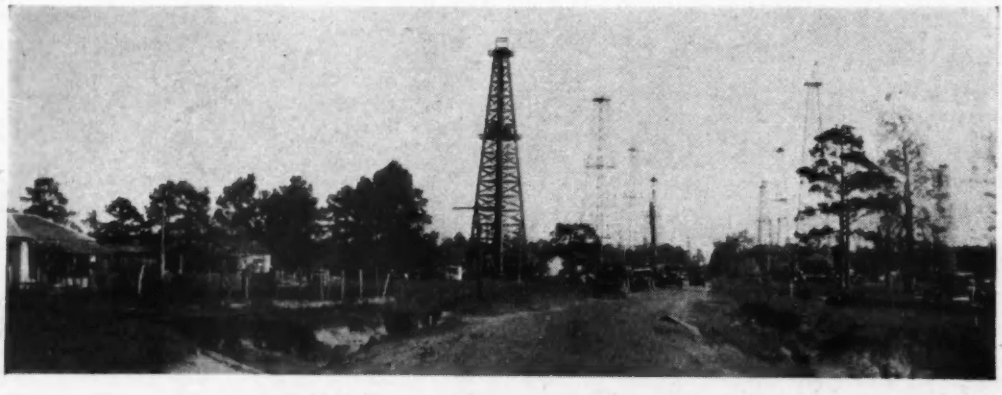
The first two tests were unproductive but only reached depths of 2320 and 4218 feet, respectively. Wilbert 5 was abandoned in salt below 5000 feet. But wells No. 3 and No. 4 were completed as oil producers. Wilbert 3, the discovery well, was completed in October, 1929, for small oil production at 5700-5836 feet. But Wilbert 4 has proved a prolific producer. It was completed in the summer of 1930 at 5156-5175 feet, flowing 50 barrels of 24 gravity pipe line oil per hour through two small chokes. By the end of 1931 those two wells had produced 644,000 barrels of oil.

Sulphur Dome

Sulphur dome, cradle of the American sulphur mining industry, and prolific source of sulphur for many years, was converted about six years ago into an oil field, yielding good completions around the flanks of the dome, at depths of 2800 to 5700 feet. It has given up about 5,000,000 barrels of oil, more than a dozen wells producing from below 5000 feet. The deepest hole which has been drilled along the Texas-Louisiana Gulf Coast was Union Sulphur Company's Fee 762 at Sulphur, which reached 9250 feet in April, 1931, where it was still in salt which had been first encountered around 5900 feet. The greatest producing depth at Sulphur is 5705 feet, the bottom of the hole in Union Sulphur Company's Fee 730. The deep drilling operations have been relatively successful, only a few efforts to obtain production below 5000 feet proving unsuccessful. All development at Sulphur is by Union Sulphur Company, which owns the dome in fee.

Cameron Meadows

Cameron Meadows is a new field, in which only two tests, located following geological and geophysical work, have been drilled, both proving productive. They were drilled by Vacuum Oil Company, which had taken a large lease block covering the prospect, and the properties have been taken over by Magnolia Petroleum Company, subsidiary of Standard Oil Company of New York, with which Vacuum Oil Company was merged. The first test was Cameron Meadows 1, which was completed in January, 1931, yielding gas and a spray of oil from 3800-3850 feet; and the second was No. 2, which came in about October 10, 1931, flowing 1000 barrels 41 gravity pipe line oil daily through a three eighths-inch choke on tubing from 5235-5270 feet.



The Humble field, of which a portion is shown here, exemplifies the vast possibilities offered by deep exploration along the Gulf Coast, having been revived by prolific, deep oil sands from the obscurity into which it was passing to a commercial importance reminiscent of its illustrious past.

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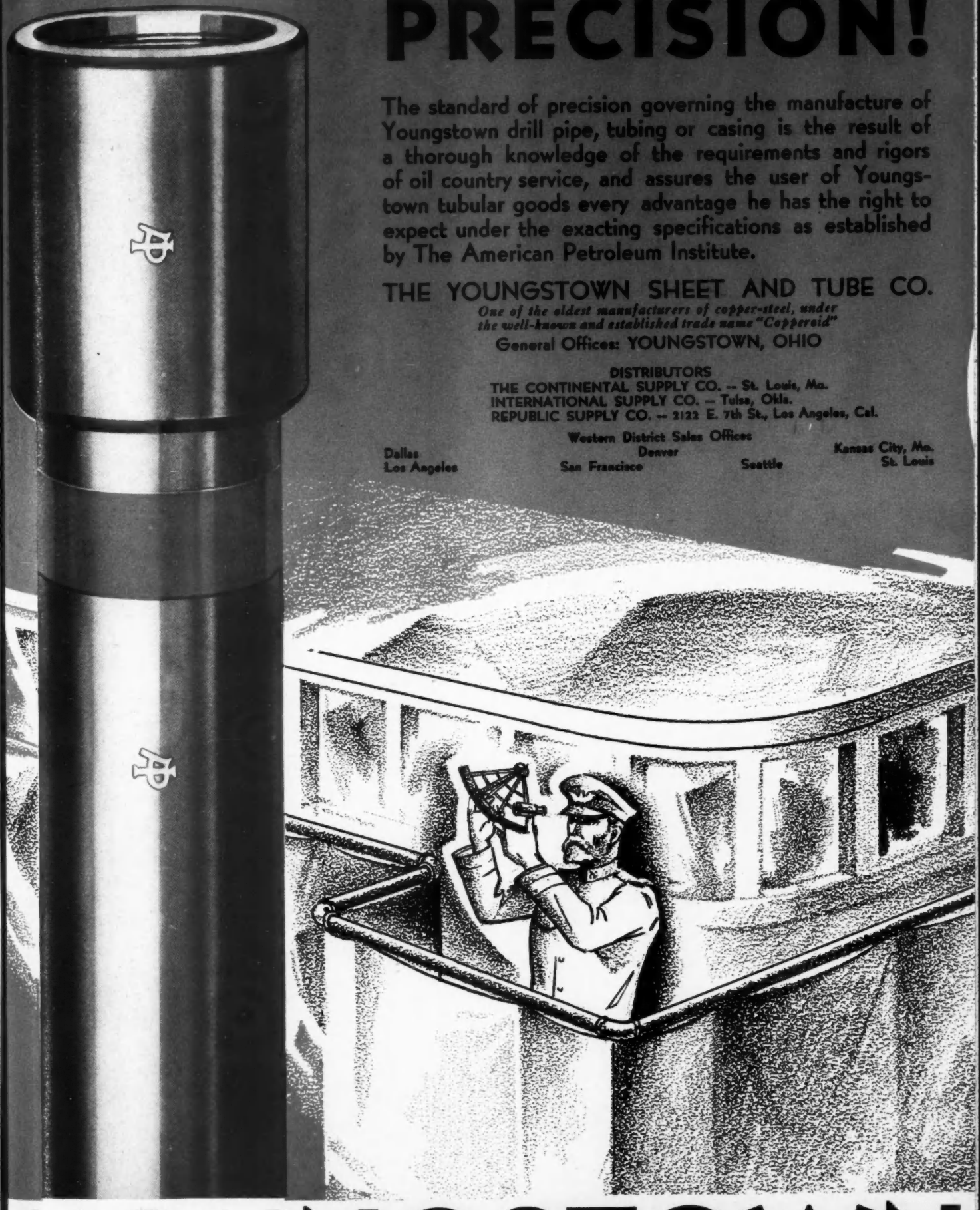

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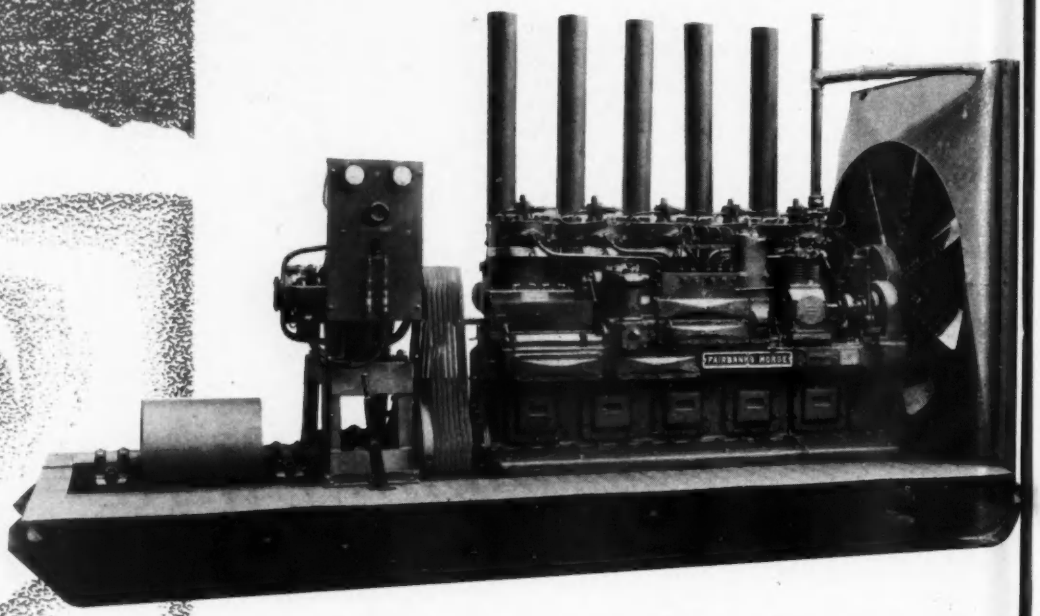

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CONTINENTAL

Kettleman . . .

Development and Production Problems

E. C. GAYLORD
Standard Oil Company of California

A BRIEF historical review of operations at Kettleman Hills is presented, including a discussion of operations under the cooperative shut-down agreement negotiated by the U. S. Department of the Interior and the effect upon field development of the formation of the Kettleman North Dome Association.

A bird's-eye-view of a few of the major development problems is presented. These include a discussion of handling high head waters by use of weighted mud versus drilling under pressure, and the benefits derived from the analytical approach to drilling problems made possible by the use of recording instruments on drilling wells.

In connection with production problems, the range in gas-oil ratios of producing wells is discussed, particularly as to effects upon ability to meet gas sales demand. The rather complex question of gas production and disposition without waste has been handled successfully through the cooperative action of the producers.

Paper Presented at Thirteenth Annual Meeting, American Petroleum Institute, at Houston, November 17, 1932.

TWO new oil producing areas have been developed during the past two or three years that have shared the limelight of major publicity. The geologic, economic, and engineering aspects and the implications and problems of East Texas and Kettleman Hills have been the subject of numerous articles in our technical press and of many discussions both formal and informal. Aside from the fact that each of these fields has enjoyed a large measure of publicity, there are so few points in common between them as to provide a most graphic illustration of the range and variety of conditions and problems that confront the operator today. The one unquestioned similarity between the two areas is the magnitude of the reservoir, and with that the parallel ceases.

The productive measures are encountered at a depth of some 3600 feet in East Texas; at Kettleman Hills 6200 feet to 7500 feet must be drilled before the top of the productive horizon is reached. It is said that the greatest productive thickness of the Woodbine sand in East Texas is approximately 100 feet; at Kettleman Hills the known thickness of the Temblor (the producing formation) is about 1500 feet. Thus, the picture of dissimilarity between these two great fields might be carried on almost indefinitely.

Kettleman Hills Comprises Three Domes

The topographic feature known as Kettleman Hills is some 30 miles in length, running in a general northwesterly-southeasterly direction, near the western border of the San Joaquin Valley and rising to a height of some 700 feet above the valley floor. The northern tip of Kettleman Hills is about 10 miles southeast of the Coalinga oil field. Structurally, these hills comprise two complete domes and the northern end of a third dome—termed North, Middle, and South Domes, respectively. The North Dome has a closure of 3600 feet. The Middle Dome is much smaller and much lower structurally, having a probable closure of about 300 feet. Practically all the development in the area has been confined to the North Dome, and that is the only portion of the hills producing at this time. Commercial production has been obtained, however, on the Middle Dome where two wells have been drilled into the Temblor oil measures. No commercial production has been found as yet on the so-called South Dome structure.

North Dome Described

A very brief statement regarding the stratigraphic relationships and characteristics of the formations encountered in drilling on the North Dome might not be out of place at this point. These formations divide themselves into three major groups:

1. The beds lying above the so-called "brown shale," consisting of sands, clays, and shales extending in age from the Pleistocene to the upper Miocene, with a thickness of approximately 5000 feet. At the base of this series is a shale which has a tendency to cave.

2. The Monterey or "brown shale" of middle Miocene age from 1200 to 1600 feet thick, thickening toward the south: This shale is extremely hard, and drilling slows up perceptibly upon entering it. Some 200 feet to 300 feet below the top of the brown shale a sand containing water under high pressure is encountered. This water has been known to build up surface shut-in pressures as high as 1800 pounds per square inch. The volume of water increases going southward from the north end of the hills. Considerable care must be exercised that circulating mud is not cut by this water on account of the caving shale just mentioned. In the earlier wells a 13⅜-inch conductor was landed just above the water; but in more recent wells drilled in the north end of the hills, where the volume of water is small (approximately 50 barrels per day), the conductor has been eliminated, and 9⅝-inch casing landed as a water string a short distance above the Temblor. A bentonite bed approximately 18 inches thick, which extends over the entire structure some 50 feet to 75 feet above the

base of the brown shale, is used as a marker bed to control the shut-off point.

A few wells encountered a carbonaceous sand at the top of the brown shale, and in one edge well it was mistaken by some for Temblor sand.

3. Below the brown shale lies the Temblor formation of lower middle Miocene age, consisting chiefly of hard and abrasive sandstones with several intercalated shale partings, which it is believed are of sufficient areal extent to divide the field into several zones of production.

The Temblor sands are the productive sands of the field, and in axial wells the thickness of the Temblor is approximately 1500 feet.

Porosity tests on a suite of approximately 100 representative core samples from the Temblor indicate an average effective porosity of slightly over 10 per cent for the entire thickness, distributed as follows:

64 per cent sand, with a porosity of 14 per cent.
20 per cent shaley sand, with a porosity of 7 per cent.
7 per cent sandy shale, with a porosity of 3 per cent.
9 per cent shale, with no effective porosity.

Kettleman Hills Attractive to Wildcatter

That Kettleman Hills have been attractive to the wildcatter is evidenced by the recording of 38 wells drilled in the area prior to the securing of commercial production, nine of which were drilled prior to November 1900. The fact that the drill failed to prove the favorable geological indications did not deter early wildcatters from drilling nearly 20 miles of hole, but early failures to secure production were due to the great depth at which production lies, as was evidenced when the Milham Exploration Company's well Elliott 1 blew out in October, 1928, after having been drilled to over 7000 feet.

Early Development Was Slow

Development of the field commenced immediately following the discovery; but was relatively slow for a number of reasons, among which were the small number of property ownerships, large acreage blocks, necessity of establishing camps, developments of an adequate water supply, grading of roads and, of course, the depth of production and the particularly hard, tought or abrasive formations encountered. The early wells were drilled relatively slowly, with particular care and precautions against unknown conditions and, consequently, took from seven to 10 months to drill. As an indication of progress, it is interesting to note that recent wells have been drilled in as little as four months.

Government Negotiated Shut-down

Despite deterrents to rapid development, one well was started before the end of 1928, and 31 wells were commenced during 1929. As is well known, the first few wells produced considerable volumes of gas accompanied by a colorless oil of about 60° A.P.I. gravity. These wells were all located near the apex of the structure, and penetrated only one half to two thirds of the productive Temblor formation. The possible production of large quantities of oil resembling gasoline was considered by some as threatening to demoralize completely an already over-supplied market, while there is little question that the volumes of gas necessarily produced with such oil threatened to waste an irreplaceable natural resource. At this juncture the United States government, controlling nearly half the mineral rights in the area, through the Department of the Interior, negotiated a shut-down agreement among the operators drilling on government land. The largest owner of fee land (some 45 per cent of the field) while not actually a signatory to this agreement, conducted its drilling and producing activities entirely in conformance with the agreement. The agreement provided for the suspension of drilling upon reaching the Temblor formation and the shutting down of such wells. Operators were recompensed for this action by sharing proportionately in a percentage of the proceeds of the oil production of the wells mentioned above. The effect of the agreement was materially to curtail drilling, and unquestionably prevented a disastrous flood of production.

North Dome Association Formed

During the suspension agreement considerable effort was expended toward perfecting a permanent guarantee of orderly development and operation. The Kettleman North Dome Association, embracing all probable productive leases on government lands as well as some fee ownerships, was the outcome of months of hard work and careful consideration by the operators and permittees involved. Discussion of this "unit plan" is not offered here, as it has been the subject of many articles; suffice it to say that the formation of this non-profit corporation on April 1, 1931, was a milestone in the progress not only of the development of Kettleman Hills, but of the oil industry as a whole. The suspension agreement was terminated by mutual consent of the parties thereto upon the formation of the North Dome Association, and development of production proceeded more rapidly, although still at an orderly rate. The situation was immeasurably relieved by the discovery that a more normal type of production could be secured at structurally lower positions than the so-called "discovery area" adjacent to the Milham well.

Maximum Daily Held to 60,000 Barrels

The two largest operators in the field have largely confined their drilling to the offsets necessary to protect against drainage by others, and to a number of prospect wells for the purpose of jointly determining the productive limits of the field. To October of this year, some 65 wells have been drilled since the completion of the discovery well. Some of these wells are credited with a potential of 25,000 barrels to 30,000 barrels daily; yet the daily output of the field has been held to a maximum of 60,000 barrels.

Meters and Recorders Used

When plans were first formulated for the development operations in the North Dome, it was recognized that carrying relatively large-diameter hole to great depths against high water and gas pressures, and in comparatively hard and unknown formations, presented many unusual problems. It was believed that the situation called not only for the selection of the strongest and best designed equipment available, but also for the consistent application—as drilling progressed—of pertinent data obtained from drilling operations themselves.

To permit the recording, analysis, and application of data from drilling wells, one operator installed various meters and recording devices at each of his drilling wells. The purpose of the study was, of course, to improve drilling practice by means of studying drill pipe stresses, bit and core shoe performance, straight hole practice, and time distribution. To accomplish this end both indicating and recording devices were installed, the former primarily for the use of the driller, and the latter for the engineer charged with analyzing the data and making suitable recommendations based on such analysis.

For recording drilling weights, the usual type of indicating device was employed; while a permanent record was obtained from a strip-type pressure recorder. The rotary table speed was obtained by attaching to the table an indicating tachometer in series with a recording instrument

of the strip type. In the case of electrically-powered rigs, indicating and recording wattmeters were used to measure power and torque applied to the drill pipe; while at steam-powered rigs indicating and recording pressure gages connected to the engine manifold served to indicate power and torque. All recording meters had the same chart travel—four inches per hour; and this facilitated the simultaneous study of all charts from a particular well.

Pipe Failures and Fishing Jobs Few

In undertaking this work it was recognized that there was little likelihood that any analysis of operations would completely solve the many complex problems involved, and in practice many difficulties in interpretation and application were encountered. On the whole, however, it is believed that the work was worth-while, and that it materially aided in the improvement of drilling practice and the continued application of such improvements. Although it is not the intent at this time to go into great technical detail in connection with this work, it should be mentioned that drill pipe failures and fishing jobs were held to a very small number, not only through the close control of drilling weights and rotational speeds, but through the selection of bits best suited to the formation. This study resulted in the elimination of certain types of bits that indicated an undue tendency to whip the pipe and render failure under load more likely.

Bit Cost Formula Is Given

A study of drilling weights in connection with the deviation of the wells resulted in placing quite definite restrictions upon the weight employed, although it is recognized that weight control alone cannot prevent crooked holes. It was found possible to correlate between wells on the basis of bit performance, and from this to establish "zones" of similar drilling characteristics. This has permitted the preparation of flexible bit programs, and has resulted in more and better holes for less money. In connection with costs, it should be stressed that it is not necessarily the cost of the bit that controls the cost per foot. In obtaining the comparative cost per foot of various types of bits, the following simple formula was employed and found extremely illuminating:

$$\text{Comparative cost per foot} = \frac{\text{Bit rental} + \text{round-trip cost}}{\text{Total footage of bit}} + \frac{\text{Crew cost per hour}}{\text{Average footage per hour}}$$

(NOTE.—By round-trip cost is meant total labor cost of running in and pulling drill pipe.)

The use of this formula permits ready comparison between various types of bits in the same formation, as well as comparison between the relative costs of drilling and coring.

The Problem in the Middle Dome Stated

Even a brief discussion of development problems in Kettleman Hills would be incomplete without mention of the major problem in the Middle Dome. Until January, 1931, there was little deep exploration undertaken in this area, due chiefly to a shut-down agreement negotiated in 1929 by the U. S. Department of the Interior. As mentioned earlier, commercial production has since been indicated by the production, in December, 1931, of a well bottomed at some 9200 feet.

The same sequence of formations encountered in the North Dome are also found in the Middle Dome, but the strata above the Temblor are thicker in the Middle Dome, and the brown shale flowing water causes considerably more trouble in drilling. This water, which is encountered at a depth of about 5500 feet, develops a shut-in surface pressure as high as 1500 pounds, corresponding to 3930 pounds at the face of the water sand. When pressure is released, the water flows at the rate of about 1450 barrels per day, and the development situation is complicated by the presence of low-pressure sands above the water. In one well attempts were made to seal off these low-pressure sands, but were unsuccessful; and the conductor was, therefore, cemented above the high head water.

To meet this difficulty, drilling through brown shale and control of the water had been accomplished in two ways: 1, by use of extremely heavy mud; and, 2, by drilling under pressure. In the first instance, it was necessary to employ mud weighing uniformly 103¼ pounds per cubic foot (13.8 pounds per gallon) in order to control the water. In was found that with lighter muds water entered the hole, and with heavier muds a loss in drilling fluid was noted. For pressure drilling, the usual type of hydraulic rotary was employed, although the ordinary rotary hoist already installed was kept in place and used for snubbing the pipe in the hole. It was necessary to snub the first 16 stands before the pipe was filled with mud, and would then go in of its own weight. After 16 stands had been run, the snubbing equipment was laid down; and the remainder of the trip differed from the ordinary procedure only in that the pipe was run through a drilling packer, and that an extra man was required to bleed off mud equivalent to the volume of drill pipe run in. In pulling pipe, the reverse operation held—with pressure built up on the well with the pumps to replace the volume of drill pipe pulled out. Usual practice was to drill with 70-pound mud, holding 1400 pounds back pressure at the surface. This gave an approximate pressure of 4075 pounds per square inch at 5500 feet, or about 145 pounds above the salt water pressure.

The Two Drilling Systems Compared

A comparison of results obtained by both drilling systems leads to the following conclusions which, it is stressed, must be considered as tentative only until affirmed by further tests:

1. The pressure equipment successfully controlled the high head water.

2. There was difficulty in maintaining straight hole with the pressure equipment, but this could probably be remedied in the future by the installation of an intermediate gate and the use of a stiffened drill string.

3. Progress was somewhat more rapid when using weighted mud, operations with the pressure-drilling equipment being slowed up in both drilling time and in round trips.

4. Balancing the above against the additional cost of weighting materials, it appears that when the mud is not wasted, this system results in over-all costs very slightly lower than with pressure drilling.

5. If a satisfactory high-pressure separator for cuttings can be developed, the number of circulating pumps required and the power consumption will be greatly reduced—thus eliminating one of the principal objections to the present form of equipment.

In other words, the comparative tests did not conclusively prove that either system would consistently result in lower drilling costs. It is hoped that further work leading to more definite conclusions may be undertaken.

Producing Confined to North Dome

To date producing operations have been confined chiefly to the North Dome area. As has been mentioned, the first production obtained was from the upper portion of the Temblor as exposed in the structurally high discovery well

and its offsets, and was predominantly gas accompanied by a spray of very light oil. It was not until approximately two years after the discovery that production of a different character was obtained from a down-plunge well located some 975 feet lower structurally than the discovery well. Due to the peculiar type of production secured from the discovery area wells, it is considered meaningless to employ the usual term "gas-oil" ratio in referring to their production. In other words, the liquid separated from the gas in the traps is so closely akin to the liquid recovered in the gasoline plants as to render more descriptive the term "gas-liquid" ratio, wherein the gas production is divided by the sum of the total liquid both from traps and from extraction plants. This conception is supported by the fact that, through variations in the pressure and temperature at which the gas and liquid are separated in the traps, a greater or lesser proportion of the total liquid is recovered in the gasoline plants. The original gas-liquid ratio of the discovery area wells was about 13,500 cubic feet per barrel, as contrasted with a gas-oil ratio of some 1500 cubic feet per barrel from the Superior Oil Company's "dark oil" discovery well. The oil from this well had an original gravity of 35 to 40° A.P.I., and was of a normal dark green color.

Gas-Oil Ratio Has Wide Range

Subsequently, a number of wells were drilled whose structural position is intermediate between the discovery and Superior Oil Company wells. In an attempt to restrict the gas production of such wells to a minimum, various amounts of the upper Temblor formation have been placed behind blank pipe, cemented through perforations, and the wells have been tubed. In addition, wells have been operated against high-surface back pressures yielding production at rates far below their maximum flow. Contrary to the expectations of many, these practices have not resulted in uniformly low gas-oil ratios for such wells. In fact, present gas-oil ratios range from 300 cubic feet per barrel on up to the ratio of the wet gas wells—in fair correlation to their structural position. There thus exists in wells—all finished in accordance with our best engineering knowledge and controlled by good production practice—a most remarkable range of gas-oil ratios. Our experience with these wells has indicated that we have far less control over the producing gas-oil ratio than commonly has been believed. Extensive series of tests have been made on a number of wells, and our conclusion is that the gas-oil ratio of each well bears a definite relation to its structural position, its producing age, and the character of the tributary producing formation. We also have reached the conclusion that, even in a given structural position, we cannot predict with much assurance what the initial gas-oil ratio will be, nor how the ratio will change with continued production. The producing ratio depends primarily upon the natural gas-oil ratio, or the proportion of dissolved and free gas to oil existing in the formation prior to production. This is the lowest possible gas-oil ratio, and a progressive increase in this ratio during the flowing life of the well appears normal. In a few instances, however, there has been a rapid increase in ratios that may have three possible explanations:

Gas from the gas zone (upper Temblor) may be entering due to failure of the cementing operation; since, at best, blanking by cementing through perforations gives a questionable exclusion of production.

On the other hand, gas-zone production may travel downward as pressure is relieved around the lower portion of the hole, due to production; and the point is reached where the bottom-hole producing pressure is lower than the normal pressure in the gas zone. The likelihood of such action is, of course, dependent upon how pervious are any shale partings between the upper and lower portions of the Temblor.

Again, such gas increases may be caused by the formation of secondary gas caps due to heavy withdrawal of oil from down-structure wells.

Institute Research Helpful

Which of these three explanations is most likely, or whether the true explanation is a combination of these three, it is impossible to say. In this general connection, it might be well to point out how uncertain is our knowledge of the form and state of underground fluids. It is heartening, however, to know that research work under the Institute's supervision is going forward at this time that should illuminate this complex problem. The writer is confident that a better understanding of the characteristics of the fluids being handled will result in the development of a producing technique which will meet our present problems successfully.

Well Performance Presents Difficulties

Another phase of current production problems is the difficulty encountered in studying the performance of these wells. With relatively few exceptions all the wells have been produced against high-surface back pressures—pressures in some instances maintained constant for over a year. Therefore, considerable trouble has been encountered in attempting to draw conclusions from decline curves which approximate straight horizontal lines, or are at most but slightly drooping. One operator is engaged in making bottom-hole pressure studies, however, and such data should prove of great use in interpreting the performance of wells operated under the conditions outlined.

The two principal operators are jointly working on solutions of the many complex production problems looking toward an equitable recovery of oil and gas. They are faced, however,

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at present with the problem of heavy withdrawals from the northern portion of the field which they have had to meet in order to protect their respective properties from drainage, so that present production from the field is coming very largely from a comparatively limited area.

There can be no question that producing conditions would be improved if the operations were mord widely scattered to avoid an undue reduction of formation pressure in one particular portion of the field.

Gas Production and Disposal Perplexing

Perhaps the most difficult problem confronting Kettleman operators has been the perplexing question of gas production and disposal. As is well known, the California statutes include a gas conservation law that is designed to prevent the unreasonable blow to the air of natural gas produced with oil.

At the time the first few wells were brought in at Kettleman, there existed no facilities for the disposal of the gas production. This resulted in the waste of gas from the field reaching as high as 380,000,000 cubic feet daily. The first move to conserve a portion of this gas was the action of one of the operators in placing some 200 miles of oil trunk line in condition to transport gas to its pipe line stations and refinery. Coincident with this action, work was commenced on large-diameter high-pressure gas lines out of the field. The two major markets lie some 175 miles to the south, and 200 miles north of Kettleman. To reach either the Coast Range mountains must be crossed, thus adding considerably to construction difficulties. The public utility companies serving these territories, however, pushed their construction work with rapidity, so that within a relatively few months Kettleman gas was reaching the consumer both in the northern and southern territories. Lines were also extended to serve the territory east of Kettleman. At the present time there are two 22-inch lines north, two lines south (one 20-inch and one 26-inch) and a 10-inch line east. All these lines operate at from 400 to 500 pounds initial pressure.

Gas Markets Have Been Established

As stated, the gas market is chiefly in the metropolitan area of Los Angeles and in the cities and towns of the San Francisco Bay region—although service has been pushed northward to the Sacramento district, and also has recently been established to San Diego on the south. The market however, is essentially urban in character, and demand fluctuations reflect to a large measure the type of connections. The difficulties imposed by the operators' desires to conserve gas and comply with the law, while at the same time maintaining a sufficiently flexable production plan to permit meeting the fluctuating demands for gas, have been tremendous. In the first place, there is, of course, the natural variation in demand occasioned by seasonal temperature change and its effect upon the heating load. While this load in northern California is relatively constant during the winter, sudden cold snaps in the Los Angeles area require an immediate response on the part of the gas producer. To illustrate, the peak demand for gas deliveries out of the Kettleman field reached 367 million cubic feet daily during the 1931-32 winter, while during the past summer the minimum demand dropped to below 160 million.

During dry years, when our sources of water power are low, gas-burning generating plants must pick up the electric load, including the street railway demand—one that has major fluctuations during the course of a day, with sudden peaks in the morning and again in the evening, and falling off to practically nothing between the hours of 9:00 p. m. and 6:00 a. m. There are also seasonal variations in demand due to the use of gas in such industries as sugar refining—a three months' load in the fall. Another frequent load fluctuation is due to the general industrial shut-down over week-ends and holidays. This fre-

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quently has called for a Saturday reduction in field deliveries of 30 to 50 million cubic feet, with peak variations of about 80 million. On the average, the week-end demand will be some 80 per cent of the normal week-day load.

There has been one great advantage in having a wide range of producing gas-oil ratios and, particularly, in having gas wells. This situation has enabled the operators to meet the widely fluctuating gas demand without major variations in the total daily oil output of the field. Insofar as has been feasible, consistent with offsetting conditions, production of gas from wells producing dark oil has been held at a minimum. The fluctuating gas demand has been met through changes in pressure—opening up and closing in—the wet gas wells. Minor demand variations have been met in a somewhat unique manner. Some of the operators have stored Kettleman gas over week-end and daily periods of reduced demand in semi-depleted gas sands in the Midway field, some 75 miles south of Kettleman. This has been made possible by the cooperation of the Southern California Gas Company in permitting this use of excess capacity in their line to Los Angeles. During corresponding periods of peak demand gas is withdrawn from the storage wells at Midway and delivered to the utility at that point. As much as 30 million cubic feet daily has been so stored, and this action has done much toward eliminating the necessity of frequent well changes to avoid gas wastage. As is quite natural, more gas is stored during the summer months than during the winter, and more delivered from storage during the winter than during the summer months. Natural storage, therefore, reduces the amount of expensive steel storage required, and acts as a material stabilizer in seasonal as well as daily demand fluctuations—besides eliminating to a considerable extent frequent well changes to meet sudden variations of short duration in gas demand.

Other Problems Encountered

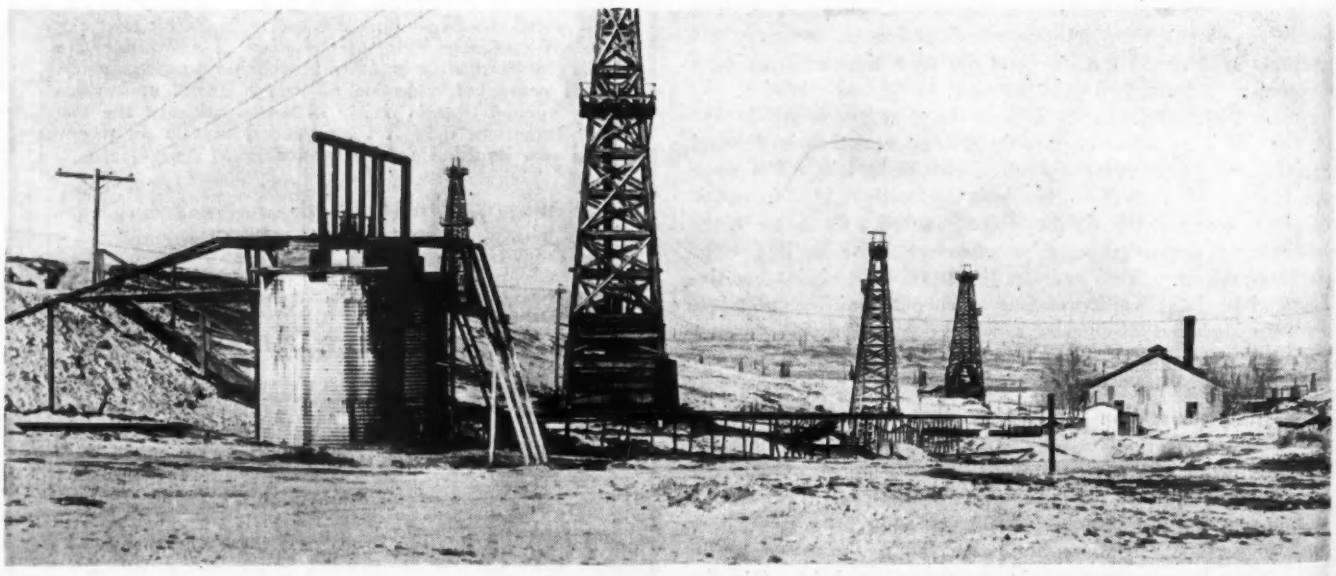
There were, however, other problems than that of market outlet that had to be met in the solution of the gas problem. Two of the four wells producing the largest quantity of gas developed mechanical trouble that rendered extremely hazardous their pressure control to reduce gas production. For a number of months these wells and their offsets were produced against surface back pressures of from 850 to 1300 pounds in an endeavor to lower the formation pressure sufficiently to permit the killing and repair of the two wells. Although the state courts had already started proceedings aimed at the reduction of the gas wastage from the field, the existing situation was wisely recognized, and production from these two wells was permitted until the operator was able to get them under control.

To aid further in reducing gas wastage to a minimum, the various operators have installed boosters to handle low-pressure gas up to transmission line pressure, and those with sales outlets have cooperated with others not as fortunate by arranging for the disposal of their gas production. The result of this cooperation is graphically indicated by a comparison between normal production and gas wastage figures. During the summer of 1930 the gas production from Kettleman reached a peak of some 475 million cubic feet daily, while the corresponding blow to the air was some 375 million feet. During the summer of 1932 the average production was some 240 million cubic feet, and the gas wastage had been reduced to the almost negligible figure of 14 million feet.

Only Results Are Indicated

The detailed history of the efforts of all operators to reduce to a minimum the wastage of this resource would in itself provide material for a lengthy discussion. Nothing more is intended in this paper than to indicate the results accomplished; these, it is believed, are indicative of the benefits of cooperation, albeit possibly such was engendered by enlightened self-interest.

In a paper of this length it is only possible to present a bird's-eye-view of some of the major problems at Kettleman. It has naturally been impossible to indicate more than the high spots. More than likely, many of the difficulties have not been solved in the best possible manner. It is a foregone conclusion that where as many varying interests are involved as at Kettleman many sincere differences of opinion are encountered. Nevertheless, the writer believes it has been demonstrated that cooperation—a give-and-take attitude—will go a long way toward the solution of many of our problems.



Lead lines at common gauge tank on Chanslor-Canfield Midway Oil Company's property at Midway-Sunset, California. From this tank the oil is moved by gravity to a central gathering point. The gravity line is shown leading away from tank.

CALIFORNIA FIELDS

Field Work at Low Ebb and Almost Half of Producing Wells in California Shut Down—Still Overproducing.

BRAD MILLS, *Staff Representative, Los Angeles, California*

Nearly Half of California's Producing Wells Are Idle

Los Angeles.—Of the 16,100 producing wells in California, about 7100 are idle. In some of the older fields where production is inclined toward the heavy scale, more than one-half of the producing wells are idle. Exactly one-half of the 3680 wells in the Midway-Sunset district are idle, while 1640 of the 2580 producers in the Kern River district are shut down. At Coalinga 855 of the 1500 wells are idle. The light oil fields have been hit less violently than the heavy producing districts. More than 160 of the 1105 producing wells at Long Beach have been shut down, while at Santa Fe Springs the same number of a total of 660 producers are idle. Huntington Beach has a high percentage of idle wells, with 204 out of 540 being off production. Dominguez has only 89 producing wells, but more than half of this number are idle. Of the 407 producing wells in the Santa Maria district, 220 are idle. Ventura Avenue is meeting its allowable with 130 of the 251 producing wells active. Most of the limited number of natural gas wells are shut in. It is obvious that the state could make much more oil than it is now producing, although it is known that the smaller producers in most fields have been shut in to allow the larger wells to make the potentials.

No Field in California Has More Than 10 Active

Los Angeles.—The small number of active drilling in California may be attributed to lack of interest in further development in settled fields, and the tendency of several large operators to refrain from operations in promising wildcat districts. The latest report shows only a little more than 100 active wells in the state. Of the total, about 35 per cent are in the unproven areas and the remainder in the proven fields. During the height of the 1927-29 development, one of two or three counties had almost as many active wildcats as the entire state now shows.

No field in the state has more than 10 active drilling wells, and some of the old leaders have as few as one drilling well. The shift from the highly developed fields of a few years ago to the more conservatively drilled districts is natural, but there is a touch of sentiment in the passing of some of the old leaders. The Los Angeles basin makes a very poor showing, but the northern fields are not much better. Absence of extensive development in Kern and Santa Barbara counties is felt in the total column. The low drilling ebb is working a hardship on both field workers and equipment manufacturers, but any improvement will reflect a better sentiment. A gradual upward trend is expected next year, but due to the good supply of crude, extensive competitive drilling may be postponed. Realization that the present developed supply of oil is dropping constantly will force increased drilling operations.

Long Beach Activity To Be For Shallower Production

Long Beach, Calif.—Completion a week ago of Dabney-Johnson Oil Corporation's No. 87, a shallow test in the Long Beach field, has caused several operators to consider a level which was ignored during the height of deep development a few years ago. The latest completion came in with an initial flow of 1000 barrels from 5200 feet, and the 22 gravity oil was considerably heavier than the average produced from deeper formations. Completion was in the Preston zone, and some increase in field work has already been noted. Several operators are planning to test the 4800-5200-foot zones over a large area, and twice the number of present drilling wells is possible. The fact that a shallower zone is the objective formation makes plugging back less expensive than deeper drilling would be. The usual run of development in a typical Los Angeles basin field has been to develop the shallow zones, the deep zones, and to plug back a small percentage of the deeper wells to produce from the original shallower formations. The latest Long Beach completions have been around depths of 5000 feet.

No Demand for Heavy Oil Quiets San Joaquin Area

Bakersfield, Calif.—Wildcatting along the east side of the San Joaquin valley has been affected by overproduction in other districts and the limited demand for the heavy oil which might be found through intensive drilling. The Bakersfield district was extremely active from 1927 until 1930, but overproduction in the light oil fields and a generally weaker oil market lowered the enthusiasm of wildcatters. Most of the leases obtained a few years ago called for immediate action, but the blocks now changing hands usually allow plenty of time for drilling.

Quitclaiming of many leases reduced the holdings of the majors along the east side of the valley. It has been predicted that many of these tracts will be bought back at higher prices than those now prevailing. Extensions near such fields as Round Mountain, Kern Front and Mt. Poso led to extensive wildcatting a few years ago, but this pioneering has lost much of its attraction during the past two years. The surplus of heavy oil has worked against operators trying to develop a larger production. Discovery of the Fruitvale and Round Mountain fields spurred several companies into action, but the usual odds were against them. Discovery of the Weed Patch field caused much less excitement than it wold have caused five years ago. The low price of heavy crude has discouraged many operators who once thrived on production of this type of oil.

North Dome Extension Play Enlivens Kettleman Interest

Coalinga, Calif.—Possibility of an extension of the North Dome toward the northwest has enlivened interest at Kettleman Hills. North Kettleman Oil & Gas Company has cored a promising shale and sand body around 9700 feet in Lillis-Welch 1, outpost test about two miles northwest of present production, and development of a producing formation in the bottom of or below the Temblor zone is possible. The location of this well is such that the odds appear to be against a successful completion. Coring of a formation which shows a fair cut does not necessarily indicate commercial production, but it means that the well was not quite a rank wildcat it appeared to be. The North Dome slopes much more gently toward the northwest than toward the sides, but a jump of more than two

miles was considered a very optimistic anticipation.

The Temblor formation was apparently found above 7000 feet, and there is some doubt as to the identity of the present formation. The upper and intermediate portion of the Temblor were extremely barren, but the company is inclined to believe that the present formation lies below what was originally the objective strata. The Whepley and/or Kreyenhagen shale is/are below the Temblor, but these questionable formations have been explored so little that conclusions can not be drawn.

The present showings in Lillis-Welch 1 may prove to be of little consequence, and the formation may change to a more barren sand. Coring of a stringer of good shale was an encouraging development, and deeper drilling may disclose interesting strata. It is one of the most interesting tests drilled since Superior Oil Company completed Huffman 1 to the southeast.

Petroleum Securities Company has completed Felix 3, North Dome test, at 8516 feet with an initial production of 2500 barrels. Drilling mud bothered the flow, and the well seemed to be capable of a higher production. This part of the field includes a large percentage of the producing fee land, and several good producers have been completed. Although some of the tracts are near the edge of the field, little water trouble has been experienced. The conservative offsetting on these leases has resulted in an orderly development.

California Field Developments

Completions

Company, Well and Location	Initial Production Bbls.	Depth
BUTTONWILLOW—		
Milham Exploration Co.'s S. P. 43-1, 1-28-22	¶14	2564
LONG BEACH—		
Dabney-Johnston Oil Corp., No. 87	1000	5219
Long Beach Pet. Corp., Indian 8	100	5755
National Security Oil Co., Seaple 3	275	6980
RICHFIELD—		
Forward Pet. Corp., Davenport 2	100	3832
SANTA MARIA—		
Union Oil Co., Newlove 51, 25-9-34	125	4114

New Operations

GLENN COUNTY—Tehama Pet. Corp., No. 1, 4-22-5.

KETTLEMAN HILLS — Kettleman North Dome Association, No. 38, 20-21-17.

ROUND MOUNTAIN—Petroleum Securities Co., Coffee 3, 6-28-29.

Wildcat Drilling Report

(Wells shut down not included)

NORTHERN CALIFORNIA

KERN COUNTY

DEVIL'S DEN—A. S. Halladay's Lincoln 1, 11-25-18, rigging rotary to deepen from 780 ft. Tom Hannah's No. 1, 25-25-18, 6¼-in cas cmt 3380 ft, td 3455 ft.

LOST HILLS—Associated et al's Williamson 1, 2-26-20, new lcn for deep test.

McKITTRICK—Ozena Oil Co.'s No. 2, 27-29-21, plugged to 2950 ft. T. H. Purman's No. 1, 22-29-21, dr shale 4890 ft. Welport Oil Co.'s No. 2, 19-29-21, co 760 ft.

SANTA BARBARA COUNTY

CARPENTERIA—Casitas Oil Co.'s No. 202-2, dr shale 2520 ft.

COAL OIL POINT—Bolsa Chica Oil Corp.'s No. 191-1A, flowing salt water and trace of oil, td 4089 ft; may drill another well.

CUYAMA VALLEY—Cebrien and Perkins' No. 1, 27-10-26, rig. Cuyama Valley Oil Corp.'s No. 1, 12-10-27, dr shale 2140 ft.

LOMPOC—O. C. Field Gasoline Corp.'s McLean 1, 6-7-33, dr shale 3115 ft. W. M. Lee's No. 1, 28-8-34, new lcn.

SANTA MARIA—Superior Oil Co.'s Bradley 1, 19-10-33, rigging for core hole test; Gracia 1, 17-10-33, coring completed.

SANTA ROSA ISLAND—Standard's Island 1, dr hard gray sand 4850 ft.

VENTURA COUNTY

CONEJO—American Oil Co.'s Powell 1, 33-2-20, sr 2215 ft.

FILLMORE—Sovereign Oil Co.'s Leavens 1, 23-4-19, dr oil sand 1135 ft, will run string of cas and make production test.

HOPPER CANYON—Bardeen Pet. Co.'s Lankershim 2B, 13-4-19, trying to complete, td 2757 ft. Commander Oil Co.'s Fennell 1, 13-4-19, will run cas, td 2100 ft.

LAS POSAS—Las Posas Pet. Co.'s Mahan 1, 22-3-20, rig.

OJAI—Livermore & Kennedy's No. 21, 33-4-23, dr shale 815 ft.

RINCON—Woodrow Pet. Corp.'s Woodrow 1, 4-3-24, dr shale 5788 ft. Honolulu Consolidated's Valenzuela 1, 23-3-24, dr shale 1925 ft.

SANTA PAULA—J. W. Mosher's No. 1, 22-4-21, dr shale 715 ft.

SESPE—Harmon & Deal's No. 1, 33-5-19, dr shale 1428 ft. H. A. Ivar's Star 7, 1-4-20, dr oil sand 1615 ft. Merchants Pet. Co.'s Cochran 6, 1-4-20, sr 110 ft.

SULPHUR MOUNTAIN—Wilshire Oil Co.'s Thompson 1, 20-4-21, dr shale 1020 ft. Petro Well Producing Co.'s No. 4, 18-4-20, dr shale 2235 ft.

TIMBER CANYON—Superior Oil Co.'s West 3, 13-4-21, dr shale 6800 ft.

MISCELLANEOUS

KINGS COUNTY—Knudsen & Schmidt's Avenal 1, 36-23-17, may deepen from 5765 ft. Triune Gas, Oil & Land Co.'s No. 1, 5-23-20, co 1100 ft for bailing test.

FRESNO COUNTY—John F. Oliver's No. 1, 20-15-18, sp.

MERCED COUNTY—Harry Bergman's Oro Loma 1, 12-12-11, sp. Los Banos Pet. Co.'s No. 1, 26-10-9, rig.

MONTEREY COUNTY — Western Gulf's Johnson 1, 29-12-2, new lcn.

SAN LUIS OBISPO COUNTY—Shell's San Miguel-Mahoney 1, 4-25-12, dr hard brown shale 3765 ft. Kent & McDonald's No. 1, 3-32-22, dr shale 3626 ft.

SOUTHERN CALIFORNIA

EL MONTE—Andrus & Hutcheson's Fee 1, 11-1-11, coring clay 905 ft.

HASLEY CANYON—W. A. Smith's Gilmore 1, 32-5-7, m 3212 ft.

HAWTHORNE—Nelson F. Hogan's Hogan 1, 23-3-14, co 815 ft.

HERMOSA BEACH—Mira Vista Oil Co.'s Calico 3, 6-4-14, dr shale 2717 ft.

HUNTINGTON BEACH—Matilda Schallemiller's Permit 194-1, validation completed.

LYNWOOD—William L. Jones' Graham 1, 31-2-12, sr 4422 ft.

NEWHALL—W. L. Alexander's Fee 1, 1-3-16, rigging up rotary. W. T. Ball's No. 1, 34-4-16, fsh for drill pipe 3600 ft. Naval Reserve Oil Co.'s Trumble 1, 6-3-15, co 1250 ft.

PLAYA DEL REY—Cooperative Development Co.'s Mesmer 1, 26-2-15, dr shale 6320 ft. Del Rey Hills Oil Corp.'s U. C. S. 1, 26-2-15, rigging rotary.

SAN FERNANDO—Willard Marble's Lake 1, 6-2-16, fsh for drill pipe 1600 ft.

WILMINGTON — Pacific Oil Investment Co.'s Lupie 1, 28-4-13, rigging rotary.

SAN BERNARDINO COUNTY — Great American Pet. Co.'s Gapco 1, 18-2-8, co.

Santa Maria Area Cored for Deep Test Location

Santa Maria, Calif.—Superior Oil Company is completing its fourteenth core hole in the Santa Maria district, with the view of obtaining geological information of value in locating a deeper test. The activity is north of the Santa Maria and Casmalia fields and was designed to test evidences of promising anticlines. The former method was to do a limited amount of surface work and to drill with the hope that various outcrops gave accurate clews. Coring is gaining favor in California, and many districts which were developed during the early days would easily stand a series of core holes to determine the producing formations. Superior Oil Company, however, is doing its work to locate evidence of anticlines, rather than to aid in the correlation of producing zones in neighboring fields. The company recently acquired extensive holdings in the district. This area is near some of the oldest producing fields in the state, and extensions and new fields are possible.

Midway Deep Test Will Not Go Beyond Present Depth

Taft, Calif.—Standard Oil Company is cleaning out to bottom in Mascot 1, deep test in the Midway field, but may not drill deeper in this 9760-foot well. The hole was bailed, but in the absence of showings the company is doubting the wisdom of deeper drilling. This well attracted wide attention in 1930 as the depest hole ever drilled and was shut down about the middle of the year at 9629 feet. Operations were resumed about the middle of 1932, but swabbing tests and deeper drilling have not improved the status of the well. Mascot 1 is now the deepest active well in California, but two or three wells have been drilled to greater depths. There is some doubt as to the identity of the formation at the bottom of the hole.

Taft, Calif.—Resumption of operations on T. H. Purman's No. 1, a wildcat in the McKittrick district, gives the west side of the San Joaquin valley an interesting test. The well is located roughly midway between the McKittrick and North Belridge fields, and is testing what appears to be a well defined anticline. This long fringe of the valley has been tested over a wide area, and the district is considered a good gamble. A large number of fields have been found along the west side of the valley, and surface indications have attracted operators for years. Some oil has been found about midway between the McKittrick and North Belridge fields, but the Purman well is a short distance west of small wells completed some time ago.

OKLAHOMA FIELDS

New Work Scattering Out Over Seminole Area But Wewoka-Holdenville Still Leads; City Field Quiet.

FLOYD SWINDELL, *Staff Representative, Tulsa, Oklahoma*

Wewoka-Holdenville Still Leads Seminole Development

Seminole, Okla.—Announcement of new work in scattered areas of the Seminole district served to divert attention but slightly from the Wewoka-Holdenville area, which now leads the district by a comfortable margin. Although the wells are relatively small a potential in excess of 8000 barrels daily has been established in recent months and new tests are being spudded at the rate of two or more a week. Mid-Continent Petroleum Corporation's Tiger 3, CSE SE NE Section 9-7n-8e, yielded 450 barrels the first 24 hours and was making gas at the rate of 8,000,000 cubic feet from Booch sand at 2885 to 2915 feet, the total depth. Eight-inch casing was set at 2893 feet, eight feet in the sand. Large amounts of high pressure gas are encountered in top of the sand and many operators are following a policy of setting casing below this point in an attempt to shut off a portion of the unwanted gas.

Galbreath et al were preparing to drill in after setting 112 feet of five-inch liner on top of the sand in Narcomie 2, NW SW NW Section 14-7n-8e. Operators had 75 feet of oil in the hole with sand just topped at 1207 feet. Six-inch casing was set at 1113 feet. Limestone Oil & Gas Company was waiting on cement to set on the six-inch at 1170 feet in Walker 4, CSE NE NE Section 15-7n-8e. A hole full of oil was encountered from sand at 1212 to 1243 feet. The first three wells on this lease were completed in the upper sand, initial production ranging from 80 to 125 barrels. Manahan Drilling Company has announced location from Narcomie 2, SW NE SW Section 10-7n-8e, northeast diagonal offset to Narcomie 1, which was a 216 barrel well with 14,000,000 cubic feet of gas in Booch sand. The company also had cellar completed for No. 1, NW SE SW Section 10-7n-8e, east offset to Narcomie 1.

Fish Pool

Winono Oil Company was running eight-inch casing in Harjo 1, SE NW NW Section 29-7n-8e, in the eastern portion of the Fish pool which adjoins the Wewoka-Holdenville area on the south and southwest. Operators had a good show of oil in Booch sand at 2777 to 2820 feet, and another oil show in Gilcrease sand at 2925 to 2935 feet. Topping the Wapanucka formation at 3007 feet, an additional showing of oil was cored from 3035 feet to 3073 feet, the present total depth. Slightly over a half-mile west, Standard Oil Company of Kansas was shut down for orders with a show on water at 3125 feet in Semele 2, CNW SW NE Section 30-7n-8e. Top of the Wapanucka was found at 3075 feet and the formation cored from 3090 to 3125 feet, after apparently having missed both the Gilcrease and Booch sands. Irregularity of the Wapanucka is illustrated by the fact that Semele 2 is a west offset to the company's Semele 1, which was completed for 1835 barrels in the same formation at 3048 to 3052 feet. Semele 2 is almost entirely surrounded by producing wells from the Wapanucka. Production is obtained from a sandy phase of the lime which seems to grade very abruptly and locally into impervious limestone, this condition having been indicated in several other spots in the field.

Sunbeam Oil Company's Campbell 3, CNE NW SE Section 20-9n-6e, in the Calvin sand area of East Earlsboro, had top of the producing formation at 2759 feet and cored to 2800 feet. After drilling plug it swabbed 335 barrels in 36 hours, production cutting 10 per cent water.

Droppleman Drilling Company et al have rig on the ground for No. 1, CSE SW NE Section 17-9n-7e, on the east edge of the East Seminole pool.

St. Louis-Pearson

Hilton Phillips et al have announced location for Moore 2, CSE SW SE Section 21-7n-4e, east offset to Moore 1, which headlined Seminole news a few weeks ago when it flowed better than 2700 barrels initially. Phillane Oil Company's Garrett 1, CSE SE NW Section 28-7n-4e, swabbed 250 barrels in eight hours from Viola lime pay at 4075 to 4080 feet. Top of the Viola encountered at 4050 feet and top of Simpson dense at 4150 feet. Stewart et al's Bailey 1, CNW NE NE of the same Section, swabbed 195 barrels in 24 hours after plugging back one foot to 4199 feet. Top of the Viola was logged at 4081 feet, Simpson dense at 4128 feet, and the dolomite at 4178 feet, with pay at 4195 feet.

West Konowa Area

Payne Drilling Company has announced location for No. 1, CNW SW NW Section 27-6n-4e, midway between the West Konowa and Old Asher pools in southeastern Pottowatomie County.

Oklahoma's First Major Pool Passes Twenty-Seventh Year

Tulsa.—Glennpool, Oklahoma's first major oil pool, was 27 years old on November 22, 1932, having produced during its lifetime approximately 208,000,000 barrels of oil. The first well, drilled by Robert Galbreath, was on the Ida Glenn allotment, 12 miles south of Tulsa and about four miles southeast of Sapulpa. Galbreath came to Tulsa in June, 1901, following excitement created by the Bland and Clinton test near Red Fork. After looking over the country between Red Fork and Mounds he selected the Ida Glenn farm as a likely spot and completed the first well on November 22, 1905, flowing 75 barrels from a sand at 1400 to 1458 feet. The sand, which was named Glenn after the allottee, was later learned to be equivalent to the now famous Bartlesville sand. Initial production of the second well was 700 barrels and the third yielded 2000 barrels on its first gauge.

Commenting on the excitement which followed his discovery Galbreath said, "It was a toss up between Sapulpa, Tulsa, and Red Fork as to which would become the oil center. Red Fork was quite a little town and had been honored with the first supply store by Oil Well Supply Company, National Supply Company followed shortly thereafter. Citizens of Tulsa soon found that the oil men who flocked to the scene of the new pool demanded accomodations and were willing to pay high for them. Accordingly it set about preparing itself to cater to the oil crowd and as a result became the oil capitol."

Development which followed the first few wells expanded into Oklahoma's largest early day boom, resulting in a daily

peak production of 117,000 barrels in June, 1907. The Bartlesville-Dewey boom, which had extended from about the middle of 1903 to the time of discovery of the Glennpool, had flooded a market none too strong and prices had dropped from $1.35 per barrel to about 50 cents. Under the influence of Glennpool the posted price took a further drop to about 40 cents per barrel, which figure it did not exceed until the early part of 1911. Subsequently production was found in Taneha, Burgess, Mississippi lime, Wilcox, Hominy, and Turkey Mountain sands, whose development required the drilling of 2700 wells.

Although the pool, with an estimated productive acreage of approximately 27,000 acres, has had a recovery of only about 7700 barrels per acre, its history has been of exceeding interest. It is probably the most outstanding oil field in Oklahoma where the application of vacuum has been successful and has resulted in a great increase in the ultimate recovery. It has been estimated by engineers of the United States Bureau of Mines that ultimate production has been increased 21 per cent from a study of 368 wells. The field is now producing between 3000 and 4000 barrels daily.

Drilling Work at Oklahoma City Now At Lowest Ebb

Oklahoma City.—Development work in the Oklahoma City pool is at its lowest ebb in more than two years with only 47 operations, of which one is a location made last May, 28 were rigs or cellars, 15 were drilling or temporarily shut down, and three were shut down indefinitely. Phillips Petroleum Company maintained its lead with seven rigs or cellars, and five drilling wells. Assuming that no further northward extensions of the drilling zone will be made, a majority of all future development will be confined to the southwestern portion of the pool which includes Section 22-, 23-, 26-, 27-11n-3w. This sector has shown a considerable amount of variation in stategraphy of the pre-Pennsylvanian beds, having resulted already in several nearly dry holes at points seemingly well located.

Phillips Petroleum Company's Rock Island 1, CSW NW SW ,Section 25-12n-3w, in the northern portion of the Oklahoma City pool, has been a well of unusual interest in a field which has furnished many surprising completions. Completed several months ago it produced 49 barrels of gasoline and 213,000,000 cubic feet of gas in 27 minutes. During the first few times the well was opened it threatented to cut out and operators had difficulty in securing an accurate gauge on production. Having no use for such a large amount of gas, an attempt was made to produce through 148 feet of seven-inch, perforated liner. This plan did not succeed and on November 4 the well was killed and an attempt made to pull the liner. Only 38 feet were recovered, making it necessary to drill by the remaining 110 feet. The hole was drilled by the 6338 feet and six-inch casing set at 6283 feet. The six-inch casing point is 44 feet below top of the Wilcox sand. Operators hope by this method to shut off a portion of the gas flow.

Oklahoma Field Developments

Completions

Company, Well and Location	Initial Production Bbls.	Depth
CREEK COUNTY—		
P. Brown et al, Bennett 1, ne nw ne 19-14-9e	*	40
Atkinson et al, F. Smith 1, csw ne ne 33-19-8e	*	3340
Johnson Oil Refg., E. Boyd 1, nw ne sw 29-19-9e	150	2201
Bassinger, Poseoah 1, nw ne sw 6-14-11e	lcn	abd
GARFIELD COUNTY—		
Continental, Looman 1, ne c se 9-20-4w (owdd)	*	5735
JEFFERSON COUNTY—		
Beck, Seay 9, nw sw se 34-6s-5w	100	1489
KAY COUNTY—		
Mummert Drlg., Cormick 1, nw c se 9-27-2e	*	3696
MUSKOGEE COUNTY—		
Beland Oil, James 11, nw se se 18-14-17e	*	1431
OKLAHOMA COUNTY—		
I. T. I. O., Stevens-Corey 1, 1327 ft from nl and 652 ft from wl se 15-11-3w 3½ hrs.	435 ¶3	6485
Phillips Pet., Ownbey 1, 110 ft nl and 225 ft from el se 22-11-3w 4 hrs	1180 ¶25	6565
I. T. I. O., A. V. Wisel 1, 330 ft from sl and 940 ft from el se 26-11-3w 10 hrs	1850 ¶18	6515
OKMULGEE COUNTY—		
Rounsaville, Rentie 1, csl ne se 30-12-12e (owdd)	25	1957
PAWNEE COUNTY—		
J. Shultz, S. O. Flores Estate 1, nwc se 7-20-8e	*	2682
H. D. Hambley, Mills 2, sw nw se 35-20-9e	180	2049
POTTAWATOMIE COUNTY—		
Phillips Pet., E. Richards 1, nec se 35-7-4e 22 hrs	220	4255
SEMINOLE COUNTY—		
Droppleman, Charty 1, cne sw sw 29-6-6e (owdd)	10	2862
STEPHENS COUNTY—		
Harry Ables, Ackers 1, csl n½ ne nw 11-1n-5w	10	1079
Mudge Oil, Woods 25, nw se nw 26-1s-5w	10	725
TULSA COUNTY—		
Bryan Pet., Hill 1-A, nw se sw 8-17-13e	*	2325

New Operations

CARTER COUNTY—Noble et al, Graham 1, ne c sw 31-1s-2w.

CREEK COUNTY—Anthony, Warlecy 3, swc se 4-16-12e. Paul Whitten et al, Herndon Royalty 1, se c ne 2-18-8e. Gled Oil, Knight 4, csw nw 24-19-8e. Leatherock & Bankston, Dasher 1, se ne se 3-19-9e.

HUGHES COUNTY—J. E. Hall et al, Chapman 1, se c 10-7-8e. Manahan et al, Narcoma 2, csw nw sw 10-7-8e; Robinson et al, Jacobs 1, nwc 15-7-8e; Robinson et al, Jacobs 2, ne nw nw nw 15-7-8e. Robinson et al, Jacobs 3, ne nw nw 15-7-8e. Sovereign Oil, Jacobs 1, cnw se ne 16-7-8e. Correction: Boettcher, Jacobs 1, se c 9-7-8e, formerly reported No. 2. Correction: Boettcher et al, Jacobs 2, cne se se 9-7-8e, formerly reported No. 1. Correction: Iglehart et al, Smith 1, cne se se 28-9-10e, formerly reported No. 2.

LINCOLN COUNTY—Pure Oil, Unglesbee 2, 340 ft from sl and 78 ft from el of Lot 5, nw 12-15-6e.

OKFUSKEE COUNTY—Fleming, Pencham 3, sw se se 2-10-11e. Correction: Turney & Avers, Barnett 1-A, sw se nw 25-11-11e, formerly reported in sw se sw.

OKLAHOMA COUNTY — Phillips Pet., Beauchamp 1, 1138 ft from sl and 810 ft from wl se 22-11-3w. Phillips Pet., Holstein 1, 1138 ft from sl and 810 ft from wl se 22-11-3w.

OKMULGEE COUNTY—Wickes, Fuqua 2, ne c nw 2-13-12e, (owdd). Misner, Colbert 6, nw se nw 14-14-14e (twin). Godge Bros., Colbert 1-A, se c 11-15-14e.

OSAGE COUNTY—C. Moore Estate, 48, sw se nw 12-21-8e. Mohawk Oil, 2, ne nw ne 10-26-9e.

PAWNEE COUNTY—P. Adamson, Jr., D. Peoples 2, csl nw sw 3-20-8e. O. N. Mainess et al, Schildberg 1, nw sw nw 27-22-6e.

PONTOTOC COUNTY—I. T. I. O., Taylor 2, cnw se se 29-5-5e. Benedum & Trees, Mallory 4, cnw sw sw 30-5-5e.

POTTAWATOMIE COUNTY—Gypsy et al, O. Connor 1, nwc se 25-6-4e. Prince Drlg., Brandenburg 1, cne sw nw 21-7-4e. Magnolia Pet., Brister 1, swc ne 28-7-4e; Sinclair Prairie, Deatherage 2, ne c nw 28-7-4e.

SEMINOLE COUNTY—Oil Investment Co., Barbree 1-A, swc 4-8-6e (twin).

STEPHENS COUNTY—Geo. Pace, Peck 1, nwc sw 32-2s-6w.

TULSA COUNTY—G. S. Voorhees, Orcutt 1-A, se se sw 28-19-13e.

Wildcat Drilling Report

(Wells shut down not included)

PAWNEE COUNTY—Deep Rock et al, Crow 1, ne se 26-23-5e, rig. O. M. Mainess, Schildberg 1, nw sw nw 27-22-6e, lcn.

NOBLE COUNTY—Lacy Rollins et al, Frank 1, se sw 6-20-2w, rig. Stanolind-Amerada, Kolb 1, cne nw 33-20-2w, dr 2510 ft.

CREEK COUNTY—O. O. Owens, Fee 1, nwc 23-15-7e, dr 1305 ft.

OKLAHOMA COUNTY—Carter Oil et al, Shawbell 24, csw ne 1-12-4w, cored 5574-83 dry sdy sh; cored 5643-62 sh, dr 5737.

LINCOLN COUNTY—Sovereign et al, Flowers 1, sw se se, 14-12-3e, dr 5360 in Woodford sh.

BECKHAM COUNTY — Pattee Royalty, Goose Tree 1, sw se se 32-10-23w, dr 1200 ft.

PONTOTOC COUNTY — Blackwell O&G, Abbott 1, nw sw ne, 14-4-6e, td 1040 ft, rig burned, rebuilding. Sunray, Grant 1, cse ne, 11-4-8e, dr 2802 ft.

GRADY COUNTY—English Drlg. Co., Hennan-Coe 1, ne se ne 32-3-7w, td 3287; rur to drill deeper.

PONTOTOC COUNTY—Williams, Kroth 1, ne se, 33-3-4e, dr 1545. Delaney, Harden 1, ne sw 30-2-7e, dr 755 ft.

COAL COUNTY—Fink & Russell, Miller 1-A, se ne 10-2n-8e (owdd) dr 2750 ft. Dodd & Burton, Grigsby 1-A, nw se ne 35-1n-8e, dr 745 ft.

ATOKA COUNTY—Barton et al, Miller 4, se nw se sw 26-1n-14e, td 505 ft, sd. Hicks Oil, Morris 2, se ne nw se 5-1-15e, S. 69-155 ft est 2 bbls 40 grav oil, sd.

JEFFERSON COUNTY—E. S. Bonner, Burgess 1, ne se 12-5-8w, td 750 ft, D&A.

MARSHALL COUNTY—Lee Cross, Hamlin 1, se sw sw, 26-6s-5e, dr 605 ft. Thomas et al, Setliff 1, sw se se sw, 36-5s-6e, td 380 ft, sd for csg.

ATOKA COUNTY—L. E. Stewart et al, Stewart 1, se c ne 2-4s-10e, dr 502 ft.

STEPHENS COUNTY—California Prod. & Oper., Garrett 1, se ne se, 11-3s-6w, td 325 ft, sd. California Prod. & Oper., Sitton 1, ne se sw, 12-3s-6w, rig.

ATOKA COUNTY—Brookshire et al, Guinn 1, nwc 18-3s-10e, dr 3305 ft.

STEPHENS COUNTY—Gillette Bros., Colley 1-A, nw se nw, 17-2s-8w, sd 580 ft, for repairs. George Pace et al, Peck 1, nw sw 32-2s-6w, dr 50 ft.

ATOKA COUNTY—Malarnee et al, D. K. O. Land Co. 1, ce½ se 35-2s-13e, td 700 ft, comp 3 bbls.

KANSAS FIELDS

Fields Lose Prestige When Potential Gauge Is Made. Important Wildcat Completions in Western Kansas.

FLOYD SWINDELL, *Staff Representative, Tulsa, Oklahoma*

Two Important Wildcat Completions in West End

Wichita, Kansas.—Two important completions were made in western Kansas pools during the week. Derby Oil Company's Hamm 1, CSE SE NW Section 33-21s-3w, southern McPherson County, encountered top of the Hunton limestone at 3470 feet, set eight-inch casing at 3466 feet, and drilled to 3473 feet, where it had a hole full of oil in five hours. During the first four hours on test it produced 470 barrels, doing 120 barrels the last hour. This rates it larger than any of the other Hunton lime completions. It is a north offset to Shell Petroleum Corporation and John Mabee's Nickel 1, which was recently completed in the same formation. The two wells apparently are either on a separate "high" between the Voshell and Hollow pools and are connected with the structure of the former pool. A dry hole in Section 9-22s-3w, separates the two pools and indicates that these new Hunton producers should be connected with Voshell rather than with the Hollow pool in which the first Hunton production in the state was found. Both wells are being offset.

The second completion of interest was Gypsy Oil Company's Kinney 3, NW SW SW Section 34-20s-3w, an old producer in the northern portion of the Voshell pool. Drilling deeper operators found top of the Arbuckle "Siliceous" lime at 3438 feet and penetrated to 3443 feet, where the hole filled with oil in five hours. During the succeeding five hours it swabbed 250 barrels and was being prepared to pump. Probabilities are that it will make close to 1000 barrels on the pump.

Marion County

Darby Petroleum Company et al have a hole full of water from Wilcox sand and have not announced intentions at Pankratz 1, CNW NW SE Section 5-20s-1e, western Marion County wildcat about six miles southeast of production in the Canton sector. Top of the Viola limestone was logged at 3287 feet and six-inch casing set at 3304 feet to shut off a hole full of water at 3289-3295 feet. Top of Wilcox sand was encountered at 3330 feet, where the hole commenced filling rapidly with water. The test probably will be carried on to the Arbuckle lime.

Western Barton County

Smith & Ash were drilling below 3428 feet with a hole full of water from Arbuckle lime at 3418-3422 feet in Wilson 1, CNW SW Section 13-18s-14w, wildcat test three miles southwest of the town of Hoisington in central western Barton County. Top of the conglomerate was found at 3367 feet and a hole full of water at 3369 feet. Operators then set five-inch casing at 3371 feet and encountered top of the Arbuckle at 3415 feet. Considerable confusion has existed in geological departments regarding exact determinations on tops of the conglomerate and Arbuckle limestone. The former is composed of reworked Arbuckle, making it difficult to determine the exact point at which true Arbuckle is encountered. For this reason many operators have made a practice of drilling 50 feet or more below the point at which they think they have true Arbuckle. The terms Arbuckle limestone and "Siliceous lime" are synonymous.

Isern Area

Torry et al were drilling below 3200 feet without having reached the conglomerate in No. 1, CNW SE SE Section 12-20s-11w, three locations south of the discovery well and southeast diagonal offset to a dry hole. After setting eight-inch casing at 2630 feet operators encountered a small showing of oil at 3100 feet. Hilligos et al's Isern 1, SW SE NE Section 12-20s-11w, the discovery well, was completed in November, 1931, making 480 barrels initially from Arbuckle at 3315 to 3329 feet. The next test in the immediate vicinity was Midwest Refining Company's Berscheidt 8, CNW SE Section 12-20s-11w, which resulted in a dry hole at 3345 feet.

New Work in Prospect

Maddison et al have announced tentative location for No. 1, CSE NE Section 34-20s-4w, five miles west of the northern portion of the Voshell pool and about seven miles southwest of the town of McPherson. Skelly Oil Company likewise has made tentative location for No. 1, CSE SE NW Section 19-27s-10w, and

Kansas Field Developments

Completions

Company, Well and Location	Initial Production Bbls.	Depth
COWLEY COUNTY—		
Wakefield, Walnut Valley 1, ne sw sw 22-32-4e	200	2325
ELLSWORTH COUNTY—		
Derby Oil, Ploog 1, cne nw se 12-17-10w	*	3329
FORD COUNTY—		
Swain, Henthorn 1, cnw 21-25-24w (owdd)	*	5782
GREENWOOD COUNTY—		
Gore-Phillips, Brothers 3-A, se nw nw 35-23-11e	50	1892
Sinclair Prairie, Davis 3, se c 6-24-12e	50	1729
Mathews-Rex, Wilson 3, nw ne sw 8-24-12e	50	1724
McPHERSON COUNTY—		
Derby Oil, Lawuement 1, cne nw se 20-19-1w (owdd)	380	3421
Palmer-Phillips, Winn 2 se c nw 7-20-1w (owdd)	990	3443

New Operations

BUTLER COUNTY—Magnolia, Koogler 27, swc se 30-26-5e (owdd).

ELLSWORTH COUNTY — Henery-Mission Oil, Arensman 1, csw sw 10-15-7w. Sinclair Prairie, Stratman 2, se c sw 1-17-10w.

GREENWOOD COUNTY—Hatfield, Boon 1, swc ne 7-25-13e. Mendenhall, Johnson 3, nw ne ne 8-25-13e. Correction: McGinnes, Holland 1, ne c sw 32-23-11e, formerly reported McGinnes, Garrison 1, 32-24-11e, ne c se. Correction: Gardner, Johnson 1, cne se nw 8-25-13e, formerly reported nw se nw.

HARVEY COUNTY—Phillips Pet., Weibe 1, ne se ne 30-23-2e.

McPHERSON COUNTY — Harris-Haun, Overman 3, se c 20-19-1w. Helmerich-Payne, Russell 1, sw nw ne 23-19-2w. Holcomb-Trimmer, Waltner 1, csw ne se 19-20-2w. Detrick et al, Unruh 1, csw se ne 21-21-3w. Derby Oil, Hamm 2, swc ne 33-21-3w.

Wildcat Drilling Report

(Wells shut down not included)

SUMNER COUNTY—Austin et al, Foy 1, sw se se, 14-34-1w, hfw 4327 ft, td 4348 ft, to pb. Trees Oil & Shell, Springate 1, ne se sw 6-34-2e, td 3639 ft, fsh.

COWLEY COUNTY — Roth and Faurot, Craig 1, se c, 2-32-3e, dr 1500 ft.

SEDGWICK COUNTY—Cameron & Great Basin, Landson 1, cse nw, 13-28-2e, td 3269 ft, ur 5-inch.

PRATT COUNTY — Ninnescah O&G Co., Hardesty 1, sw se se, 28-27-11w, hfw 3226 ft, dr 3284 ft.

BUTLER COUNTY—Ramsey, Michael, sw nw nw, 18-27-3e, hfw 2927-35 ft, dr 3005 ft.

FINNEY COUNTY—Joe Denham, Brown 1, csw, 16-25-34w, dr 2000 ft.

FORD COUNTY—Swaim et al, Henthorne 1, cnw, 21-25-24w, T. Sil. 5669 ft no show, 5772 ft hfw, sd 5782 ft.

EDWARDS COUNTY — Mid-Kansas, Converse 1, sw ne ne, 30-24-18w, dr 5295 ft.

HARVEY COUNTY—Phillips Pet., Wiebe 1, nw sw nw, 30-23-2e, rig.

GREENWOOD COUNTY—York State, Joy 1, se c, 11-23-11e, dr 1400 ft.

McPHERSON COUNTY — Holcomb & Trummer, Waltner 1, sw ne se, 19-20-2w, lcn.

NESS COUNTY—Sinclair Prairie, Wilhelm 1, csw sw 16-19-21w, rur.

MARION COUNTY—Vernon-United Pet., Schmidt 1, sw nw 35-19-1e, 8-inch 2210 ft td.

BARTON COUNTY—Smith, Ash et al, Wilson 1, cnw sw 13-18-14w, 3260-69 ft show water, dr 3327 ft. Ranken et al, Sooey 1, csw ne 34-18-12w, rig. Sinclair Prairie, Turgeon 1, cne nw 3-16-12e, ru.

ELLSWORTH COUNTY—Raymond Gear & Hannah, Kroboth 1, se nw, 12-15-10w, 12-inch 477 ft, dr 1080 ft. Sinclair Prairie, Malir 1, cne ne 27-15-8w, rur. Henry et al, Arensman 1, csw sw, 10-15-7w lcn. Gurley Bros. & Barnsdall, Union Pacific 1, nw sw, 7-14-7w, td 2670 ft hfw, rng 8-inch.

GRAHAM COUNTY — Schleimeyer et al, Smith 1, se c 24-8-25w, td 3615 ft, recementing 8-inch dr plug.

No. 2, CNW NE NE Section 30-27s-10w, both in the Miles or Cunningham area of northwestern Kingman County.

Washoma Petroleum Company was drilling deeper Meeks 2, CNE NE SW Section 7-20s-1w, old Viola lime producer on the southern end of the Ritz pool. The well was originally completed April 20, 1932, producing 83 barrels from 3402 to 3421 feet. It was recently deepened to 3423 feet still in Viola lime where it pumped 29 barrels of oil and no water. Operators will deepen to Wilcox sand. Mohawk Drilling Company's Nannie McGill 1, CSW SW NE, of the same section, was completed November 10, 1931, for 681 barrels from Viola limestone at 3406 to 3408 feet. It was deepened 23 feet and recompleted June 14, making nine barrels of oil and 20 barrels of water. On its recent potential test it gauged 11 barrels of oil and 190 barrels of water.

Potential Gauges Reveal Fields Greatly Overrated

Wichita,Kansas.—Accusations that proration allowances were not being equitably apportioned in certain Kansas pools led the Public Service Commission to require new gages on all wells in the Ritz-Decker-Garrett area of McPherson County and the Startmann area of Ellsworth County. Reports from the former reveal some surprising things in the way of potentials. Gauges on 68 out of 104 Viola limestone wells, show a daily potential of 52,420 barrels compared to the old rating of 78,604 barrels. This is a decline of 26,-184 barrels or 33.3 per cent. Thirty-one out of 67 wells producing from the chat horizon show 9570 barrels daily, compared with the old potential of 26,098 barrels, a decline of 16,528 barrels or 63.3 per cent. Combined the two producing horizons show a decline of 41 per cent.

Most surprising of the individual well gauges was that reported from Dickey Oil Company's Decker "B" 3, CNW SE Section 35-19s-2w, in the western portion of the Ritz pool. This well was completed July 20, 1932, flowing 7163 barrels in 12 hours and gaining for it a potential of 14,326 barrels, the figure upon which it has been prorated since that date. On the recent test operators were able to produce only 700 barrels in 24 hours despite the fact that barely four months have elapsed since its completion. Tests so far reported from chat wells probably are not representative of all the wells producing from that horizon since the figures include this one drop of 13,626 barrels in Decker "B" 3. Final figures for the Viola lime area are, however, expected to closely approximate those already reported. Practically all of the chat oil producers make water initially or shortly after completion.

NORTH and WEST TEXAS

Ector County Strike Gives West Texas First Important Oil Strike in Two Years. Shallow Strike in Young.

H. H. KING, *Staff Representative, Fort Worth, Texas*

Gray County Dolomite Lime Area Gets Another Producer

Amarillo, Texas.—The dolomite lime horizon in west central Gray County has another oil producer in process of completion as result of (J. M.) Baldridge Oil Company's W. E. Melton 1 having developed a flow of 75 barrels daily from lime formation at 3013-3064 feet. The well has been drilled to 3057 feet, and will be shot, with prospects of making a much better producer, based on results obtained by shooting other nearby lime wells. It has a surface elevation of 3187 feet, and is in the northeast corner of Section 95, Block B-2, H&GN Ry. survey. The Texas Company's Wm. Jackson 2-B, a north offset, made 350 barrels initial after shot in the lime, and is pinched to 90 barrels daily.

Interest in this dolomite area become aroused last July when Saulsbury et al's M. Davidson 1 was completed in the southwest corner of Section 87, making 255 barrels daily after shot. Davidson 1 is located on 160-acre lease farmed out by Phillips Petroleum Company for a one eighth over-riding royalty. Phillips Petroleum Company is reported to have acquired Saulsbury et al's interest in the well and lease lately for $16,000, including a $12,000 cash payment, and the balance payable from one fourth first production.

Cambrian Oil Company's (Cree-Graham-Hoover) J. B. Barrett-Skelly 1 failed to score a production increase when drilled through the granite wash pay at 3130-45 feet to red shale at 3205 feet, and has been completed making 150 barrels daily. This well is located in SWc N½ NE Section 130, Block 3, I&GN Ry. survey, western Gray County, and threatened to make a big producer when it started off with a flow of 20 barrels of oil hourly and 15,000,000 cubic feet gas daily at the top of the granite wash horizon. Running of a string of 6⅝-inch pipe with packer cut off the gas, and lowered the oil yield. The Texas Company's J. B. Barrett 1 has been statred as a west offset, and Skelly Oil Company will also be required to drill.

In the LeFors area, Gray County, The Texas Company's J. E. Williams 13 flowed 920 barrels oil in 12 hours and quit when a fishing job developed at 2744 feet, or within 15 feet of sea level depth. The oil flow came from granite wash formation at 2612-22 and 2715-20 feet. In the same area, Skelly Oil Company's G. H. Saunders 7 made a peak flow of 730 barrels oil daily when placed on gas lift. It logged three separate oil horizons between 2680 and 2768 feet. The Texas Company's M. A. Shaw 5, a west offset to the latter, has been completed in granite wash at 2675-2768 feet making 1650 barrels oil daily.

Plugging orders have been issued for Sid Richardson et al's J. E. Wright-Gulf 1, located in SWc NW Section 12, Block 3, I&GN Ry. survey, Gray County, after drilling to 2965 feet without encountering oil or gas in commercial quantities. This failure is on the northeast edge of the Finley-Brown-Wright field.

Operation of the 2500 barrel crude skimming plant of Dixon Creek Oil & Refining Company near Kings Mill is to be suspended as result of The Texas Company having agreed to purchase the allowable production of the properites. Control of the former was acquired middle November by the King Royalty Company, Wichita Falls, through a substantial cash payment and stock exchange arrangement.

Ector County Scores Important Oil Strike

San Angelo, Texas.—Ector County is to realize its third separate oil area as result of the wildcat efforts of L. C. Harrison-Fred Turner and others on the F. V. Addis ranch, and in doing so will give West Texas its first important oil strike in more than two years. Addis 1 was preparing to make an open flow test and deepen late last week after being shut in since November 21 to erect tankage. Estimates on the production at the time the well was shut in ranged from 100 barrels of oil daily and upward, with gas flow rated at 3,000,000 cubic feet. The oil is coming from sandy-lime at 3846-3862 feet, with a surface elevation of 2943 feet.

Harrison et al's Addis 1 is located 330 feet from north and 1320 feet from the west lines of Section 35, Block 43, T&P Railway survey, T-2-S, and on a 480-acre leasehold. It is about 10 miles northeast of the Connell-Judkins field, nearest production, and six miles southwest of Odessa. Oil and gas possibili-

ties for the area have been considered bright since Bert Weekly-Castell and McCurdy's Cowden 1, located about two miles west of Addis 1, showed for a small gasser and made some oil before abandoning at 4375 feet last March. The main line of the Texas & Pacific Railroad is within 1½ miles to the south, so transportation will not be a problem for this new area. Stanolind Oil & Gas Company should reap the most benefits should the oil area spread out, as it has 10 sections under lease beginning at the north line of the Addis tract, and will have an offset to drill. Humble Oil & Refining Company is exceptionally well fortified with leases and royalty interests to the south, having spent more than $100,000 cash since first of year playing a north and south trend.

The last important oil strike made in the district was Fuhrman Petroleum Corporation's W. T. Ford 1, which established a new pool for Andrews County in November, 1930, or about a month after Stanolind Oil & Gas Company (was Southern Crude Oil Purchasing Company) opened a new oil field on the Cowden ranch in northern Ector County. A second producer has been added to the above two discovery blocks, but neither have procured market outlets.

Landreth Production Corporation's O. B. Holt 1, C SW SE Section 15, Block 43, T-1-N, T&P Ry. survey, Ector County, is drilling below 1000 feet, and is on a line between the Fuhrman-Stanolind producers. Holt 1 would provide the means for stimulating development work on both sides of the Andrews-Ector County line should a commercial producer result.

Sid Richardson et al's John Sealy 2, a south Winkler County wildcat, is making 4,000,000 cubic feet of gas from series of sandy-lime pays at 2450-2685 feet, with a surface elevation of 2678 feet.

Progress has been slow but steady on Big Lake Oil Company's University 1-C, Big Lake field, having drilled to 9330 feet last week. The unitized wildcat test of Stanolind Oil & Gas Company on the Todd ranch, Crockett County, was still in shale with streaks of lime at 7012 feet. This test is to try for production in the Ordovician lime.

Expect Revival of Shallow Drilling in Young County

Wichita Falls, Texas.—A fresh outbreak of shallow drilling in northeast Young County is likely to follow in the wake of the wildcat oil strike made by J. J. Moran and Wotola Royalty Company on the R. L. Webb-R. H. Miller tract, A. Rohus survey, with an estimated production of 30 barrels daily on pump from sand at 772-781 feet. This discovery well is located 2850 feet south and 150 feet east of the northeast corner of the A. McMullen survey, and about one mile southwest of nearest production. Winemiller Oil Company recently drilled an 823-foot failure a short distance to the east, but there are no other dry holes in the immediate area.

A second shot is to be given Rathke Oil Company and Leidecker's wildcat on the Rogers farm, W. Fitchett survey, Young County, after showing some oil from first shot of 40 quarts in gray lime at 3760-93 feet. This test which is located southwest of Graham and north of the river, gave promise of making a commercial oil producer at 3425-36 feet in sand, but the oil flow quit after the third day. A string of 5-3/16-inch pipe has been set at 3425 feet. The gray lime was topped at 3673 feet with a surface elevation of 1151 feet.

Stratmann Pool in Kansas Flow Test Reveals Drop

Wichita, Kan.—New potential gauges taken in the Stratmann area of southwestern Ellsworth County show a decline of 37.18 per cent below the figure upon which the field has been prorated, according to a report from Lloyd Pickrell, state proration umpire. The report shows the old potential to have been 16,607 barrels from 10 wells, compared to 10,432 barrels from the same number of wells on the tests made between November 15 and 20. New potentials were determined on the basis of a 24-hour pumping test, whereas the old figure was based on 12-hours on the pump multiplied by two. El Dorado Refining Company, formerly Aylward et al, was biggest loser on the regauging, having a new potential of 5849 barrels compared with 10,084 barrels, a loss of 4235 barrels of the total field decline of 6175 barrels. Instructions have been issued operators to base allowable for the first 14 days of November on 10 per cent of the old potential and for the last 16 days, 17 per cent of the new potential.

North and West Texas Field Developments

Completions

WEST CENTRAL TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BROWN COUNTY—		
Gunn Prod. Co., Graham 1	*	2000
K. J. Michael et al, L. D. Stone 1	*	1382
Sawyer et al, Shore 22	5	1248
CALLAHAN COUNTY—		
E. L. Anderson et al, Berry 1	*	426
J. B. Atwood et al, W. M. Ables 2	¶1	405
Hayek Oil Co., Finley 1	¶½	572
C. B. Holmes et al, Kelton 2	25	761
Geo. A. Perry et al, Williams 1	*	750
Snebold & Rosenfield, Finley 2	5	550
Woodley Pet. Co., Radford 25	20	437
COLEMAN COUNTY—		
Anzac Oil Corp., L. M. Polk 1	*	1313
Arcadia Ref. Co. et al, Burkett 2-B	20	1636
Herbert Oil Co., Weaver 2	*	1875
Claude Vaughn et al, J. J. Crowder 1	*	2041
PALO PINTO COUNTY—		
Brazos River O&G Co., McAvoy 1-B	*	2048
C. F. Gibson et al, Spore 1	¶¾	3195
W. K. Gordon et al, H. Caine 2	*	3347
SHACKELFORD COUNTY—		
J. L. Douglas et al, W. A. Carter 5	12	620
Gilman & McMurray, E. A. Jeter 6-A	15	933
Page-Knight & Gwinn, Jeter 1	5	872

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
CARSON COUNTY—		
R. R. Osborne et al, B. F. A. Byrum 1	20	3263
GRAY COUNTY—		
Sid Richardson et al, J. E. Wright-Gulf 1	*	2965
Skelly Oil Co., G. H. Saunders 7	725	2768
The Texas Co., M. A. Shaw 5	1650	2768
Wetzel Oil Co., J. S. Morse 2	*	2675
HUTCHINSON COUNTY—		
Holmes & Nublock, Moore 2	200	3109
Huber Pet. Co., Christian 2	¶11¾	2405
Timms-Dietsch Oil Co., Jordan-Brown 2	310	3076

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
Tom M. Hellams et al, K. Jena 1	*	684
Jess Lincoln et al, Ray 1	15	1127
W. E. Maxson, Jr., et al, Green 17-B	60	1113
The Texas Co., K. & K. 4-B	*	1828
W. C. Young et al, Carr 1	20	1403
COOKE COUNTY—		
W. D. Cline & Eggers, Nat Piott 1	*	1057
MONTAGUE COUNTY—		
Bissey & Lee, Lemons 1	*	375
Bridwell Oil Co., Tucker 3	125	1248
THROCKMORTON COUNTY—		
J. W. Robinson et al, Kemp 1	¶1	244
WICHITA COUNTY—		
J. L. Bridges et al, Warren 8	15	511
Warren 9	*	596
J. Kingsberry, Jr. (Rec.), Overby 1-A	20	1781
E. H. Pigg et al, Case 1	*	1952
Geo. J. Proctor et al, Honaker 9	25	869
Honaker 10	10	399
A. T. Wolfe et al, E. Daume 9	*	772
YOUNG COUNTY—		
P. K. Deats & Brazelton, Barnett 2, Sec. 2245	*	717
J. G. Jones et al, Stewart 1, Sec. 6	*	653
King Royalty Co., Larimore 41, Sec. 2246	15	657
Henson-Tidwell & Phillips Pet. Co., Newby 2	*	2750
Kleiner-Hy Oil Co., Johnson 4	7	507
E. R. Perkins et al, Tucker 1, Sec. 180	*	1053
The Texas Co., A. C. Casey 1, Sec. 1486	*	662
D. L. Wolfe et al, Wolfe 4, Sec. 165	20	885
Wooten & Reed, Robinson 3-A, Sec. 3403	*	751

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BREWSTER COUNTY—		
Trans-Pecos O&G Co. (J. C. Grastorf), Asa A. Jones 1	*	2820
GLASSCOCK COUNTY—		
Noel T. Lawson et al, M. M. Edwards 1-B	2000	2140
FISHER COUNTY—		
Southern Oil Corp., Dr. A. E. Pardue 1	2500	3105
PECOS COUNTY—		
Arthur Adams & Atlantic Oil Prod. Co., Gregg-Shearer 1	30	1417
Cardinal Oil Co., Tippett-Stanolind 3-K	10	428
WARD COUNTY—		
Penn Oil Co., J. F. York 1	90	2457

EAST CENTRAL TEXAS

Shell Has Big Tract Around New Woodbine Strike in Leon County. Intimated Seepage Oil Is a "Racket."

H. H. KING, *Staff Representative, Fort Worth, Texas*

Leon County Wildcat Looks Like Oil Well and New Field

Tyler, Texas.—Richly saturated oil sand recovered from Shell Petroleum Corporation et al's wildcat on the Wm. Phillips land, Leon County marks the beginning of a new oil field in the Woodbine sand belt of East Texas.

The owners have shown confidence in the showing made by this wildcat by cementing a string of seven-inch pipe on November 25 at 6052 feet.

The best showings of oil and gas came from four feet of hard gray oil sand topped at 6057 feet followed by nine feet of soft oil sand at 6061 feet, then black poker chip shale to the bottom of the hole at 6084 feet.

In the event of a successful completion Phillips 1 would not necessarily become a market factor as it is near the center of a large block but it would switch wildcat activity in the Woodbine belt to an entirely new section of the state. It is situated about 40 miles southeast of Mexia and on the south end of the Woodbine sand belt.

This Leon County wildcat is surrounded by a block of about 17,500 acres that has been given a high geological rating since it was taken some three years ago by the late Robert R. Penn, head of the Penn Oil Company, and J. R. Black, Dallas. They sold an undivided half interest and operating control to Shell Petroleum Corporation, and later the remaining half interest has been sold off as follows: Penn Oil Company one-eighth; J. R. Black, Darby Petroleum Company, Tidal Oil Company, Frank Buttram and Humble Oil & Refining Company each have one-sixteenth; and Westland Oil Company and Gardner Petroleum Company have one-thirty-second interest each. Of these nine participating companies, the Humble Oil & Refining Company, a late buyer, is the most likely to provide a pipe line connection. The area is somewhat isolated from Shell Pipe Line Corporation's existing lines.

Operations have been underway on Wm. Phillips 1 since September 9, and the only delay was encountered at 5363 feet when 12½-inch surface casing parted while coming out of the hole with drill stem, necessitating the landing and cementing of 9⅝-inch pipe on bottom. The Pecan chalk was logged at 4135-4181 feet and Austin chalk at 4841-5570 feet, with a surface elevation of 423 feet. The well is located 1352 feet from the south and 1325 feet from the east lines of 164-acre lease, E. A. Swayze Survey. Recovery of broken sand cores showing traces of oil and gas between 5983-91 feet, probably lower section of the Eagleford shale, placed this wildcat among the important ones to be watched, but a drill stem test on November 14 failed to reveal oil or gas, with the Johnson sand tester set 36 feet off bottom, which was then 5998 feet.

Freestone County

Salt water core from Woodbine sand at 3723-28 feet eliminated the Freestone wildcat test of W. A. Reiter and Neversuch Oil Company on the O. Burleson 202-acre tract, Wiley Carter Survey. This test was trying for oil production on a secondary fault zone to the east of the Mexia fault.

The Anderson County wildcat of W. H. "Bill" Roeser et al on the J. B. Hanks tract, Anderson County School Land Survey, appears to have exhausted its chances for production in the Woodbine series, which was topped at 4774 feet, and was drilling below 5250 feet last last week. First red beds were logged at 5117 feet. It has a contract depth of 5300 feet, but will probable be carried to salt water before abandoning.

Bowie County is to receive a 4000-foot test that Ajo Oil Corporation, Dallas, has contracted to start by January 1, 1933, near center of 10,000-acre block, and will drill on the Nichols & Daniels 167-acre tract, Hugh B. Shaw Survey. This test is to be about two miles northwest of 3950-foot failure completed last month by Joe Burnham et al on the F. O. Weiss land, J. Dean Survey, but passed through numerous oil saturated red sand formations below 3722 feet. Burnham and associates are credited with having agreed to furnish fuel oil and $2000 cash for 700 acres of lease protection scattered through the above block.

The Wood County wildcat test of F. B. Parriott and J. S. Hanlon on the J. H. Harvey-Stuart 1964-acre tract, M. H. Ussery Survey began attracting interest last week while drilling below 4100 feet with key formation logging about 400 feet higher than normal. This test encountered a thin Pecan chalk section same at 2984 to 3165 feet, with a surface elevation of 604 feet.

D. Replogle and Sinclair Prairie Oil Company's Mary Saner 1, located 1¾ miles to the southeast is drilling below 2100 feet in giving the Wood County structure a dual test. This is unusual for two wildcats to be under way at once on a structure.

Four Completions on Small Tracts Forcing Many Offsets

Tyler, Texas.—Seepage oil found in a fresh water sand near the 700-foot level in the southwest of the D. Ferguson Survey northeast of Gladewater section of the East Texas field, offers worthwhile production as evidenced by the performance of the latest shallow completion. Humble Oil & Refining Company's A. Carter 9-X, located in southwest corner of 90-acre lease, made an initial flow of 32 barrels hourly, 15 per cent fresh water, via one-inch choke from 660-695 feet. This well was drilled with a machine, and cemented 8¼-inch pipe at 527 feet. Authorizations have been made for the drilling of three more shallow wells on the west line of the lease. Including shallow wells owned by other operators to the west, there are now a half dozen such producers, which are apparently fed with oil escaping from a defective cased well producing from the Woodbine sand formation. The railroad commission has been unsuccessful after the elapse of more than a year in correcting this seepage oil situation. Rumors have been persistent that a well owner purposely perforated casing in a regular well so as to flood the shallow water sand with migratory oil with a

view of drilling for same with numerous shallow and inexpensive wells.

A tight sand condition encountered by Sun Oil Company's J. C. Gray 9, located near center of 114-acre lease in Spring Hill community, D. Sanches survey, Gregg County, indicates that it may have to be pumped to make its proration allowable. Broken sand was logged at 3586-3652 feet, and after repeated swabbing the well flowed 15 barrels of oil in 15 minutes, but soon quit. Gray 7 had a similar experience, and has been on pump since last September although the lease is surrounded by production. Corbin-R. Y. Walker et al's A. H. Tubbs 1 located in southwest corner of 51-acre lease and an edge well in the Spring Hill area, sustained a junked hole after drilling through oil sand at 3570-78 feet with the hole bottomed in Georgetown lime at 3592-96 feet, and the lease reverted back to J. K. Wadley. Ray Drilling Company is reported to have contracted to drill four free wells and carry Wadley for a one-half interest.

Small State Tracts

Four completions have been made on an equal number of the 12 separate tracts, ranging from 97/100 to 1.57-acres in area, that comprise the 15.3-acre vacancy land leased by the state recently, and work is getting started on the remainder. This unusual split up tract is in Gregg County, and borders the north bank of the Sabine River. Some of the owners of the tracts are spotting their first wells with a view of later drilling another test on the same site. Completions have been made by Jack Blalock, Killingsworth et al, Groneman & Doran and Groneman & Gracey. Owners of surrounding leases are matching offsets in order to counteract the excessive oil drainage that their properties will be exposed to by reason of the above close well spacing.

Two completions made on structurally low leases on the west edge of production in the Kilgore area, W. P. Chism survey, did not show water upon initial flow test although situated amidst wells that are making water. Sam B. Raitman of Tulsa drilled about two feet in oil sand to a total depth of 3772 feet in completing A. Z. Jeffrey 2, making 20 barrels oil in five minutes via 1¼-inch choke on tubing. The first well on this 26-acre lease was drilled by Deep Rock Oil Company, and has been making salt water since the early part of 1932. L. W. Callender et al's Crim Mercantile Company 3 is credited with having flowed at rate of 120 barrels oil hourly via open tubing, with 85 pounds working pressure, and 245 pounds closed in pressure, after drilling sand at 3710-12 feet. This well has a sub-sea depth of 3712 feet.

One of a pair of outpost tests trying for east and west extensions to the productive limits of the Joiner area failed, and the other appears doubtful of making a well. J. O. Allen and Alexander of Arp, Texas, ventured out nearly a mile to the west of production in Smith County in drilling J. O. Allen 1, located in southeast corner of 25-acre tract, M. G. Heriquez survey, and found salt water in sand cores recovered. The hole was plugged at 3780 or 3829 feet, with a surface elevation of 468 feet. T. C. Adams of Bethany, La., and others' N. L. Marvill 1, located on 19-acre lease in the easterly southeast corner of the Thos. H. Smith survey, Rusk County, was awaiting a drill stem test after drilling through a thin section of broken sand to Georgetown lime at 3695-3709 feet.

Minor extensions to the east and west limits of oil production on the south end of the Joiner area were scored last week. Sun Oil Company's A. Lee 4, located near Graham Lake, provided the west extension in registering a flow of 21 barrels oil per hour via taper tubing at a sub-sea depth of 3319 feet. This outpost failed to flow when swabbed and tested in sand at 3657 feet, and was forced to deepen four feet, or dangerously close to the known water level, to make a flowing well. Stanolind Oil & Gas Company and Pure Oil Company's W. H. Siler 38, located in southeast corner of T. M. White survey, logged more than 30 feet of richly saturated sand between 3608 and 3673 feet in widening the productive area to the east. The well flowed 40 barrels of oil in 50 minutes.

Instead of abandoning after drilling through a small layer of oil sand and water sand to 3809 feet, Stanolind Oil & Gas Company's J. W. Ashby 1, located in northwest corner 100-acre lease, Mary Walker survey, has been plugged back to 3659 feet, or minus 3261 feet, and seven-inch casing cemented at 3648 feet. There is some chance of making a pumper. This test encountered poor sand conditions. Stanolind Oil & Gas Company and Pure Oil Company's W. H. Siler 37, a west offset to Ashby 1, logged broken sand and shale at 3687-3731 feet and flowed its proration allowable of 40 barrels in three hours and 50 minutes via three-quarter-inch choke.

Saxet Gas Well Fire One of Worst in an Area of Well Fires

San Antonio, Texas.—One of the worst fires in the history of South Texas Gulf Coast oil fields is raging in the Saxet field, Nueces County, where a giant well is belching flames, mud and rocks as high as 2000 feet into the air.

The well is O. R. Seagraves, Trustee's Perkins & Legasse 1, located 330 feet from the northwest corner of Block 22, Shepherd Farm lots subdivision, in the main producing area of the field.

It was drilled to 3145 feet and while the tools were being removed from the hole the night of November 17, blew out from one of the several upper sands, probably from 1600 feet. Within a short while, the derrick, machinery, etc., fell into a crater created by the heavy pressure. There was only about 500 feet of surface casing in the hole.

On November 18, the well caught fire and has been raging ever since. Five craters have been formed around the well, each catching fire and apparently are not controllable. The crater now is more than 600 feet wide and the steady flame is from 250 to 400 feet. At times, the falmes increase their intensity and shoot high into the sky.

The well is estimated at from 35,000,000 to 100,000,000 cubic feet of gas.

The well is a reminder of a number of others drilled throughout the field which caught fire, cratered, but finally bridged over. This well, apparently is much worse than any heretofore drilled out of control.

White Point, just across the bay from Saxet, it will be remembered had a well that cratered and burned for many months.

The wells immediately surrounding this burning gasser were shut in for a few days, but have resumed drilling again after all necessary precautions were taken to prevent trouble from the wild well.

One completion was reported from the field, Bessie Elder 2, of Gulf Coast Oil Company, which was deepened from a gas sand at 2742 feet. It is flowing 100 barrels from 4554-64 feet. The flow likely will increase after it is allowed to fully clear itself.

East Texas Field Developments

Completions

Company, Well and Location	Initial Production Bbls.	Depth
JOINER AREA—		
Ajo Oil Corp. (was C. G. Wiley), Joe Lee (50-ac) 2-A	9600	3795
American Liberty Oil Co., I. L. Kinney (336-ac) 16	1500	3630
E. L. Pinkston (84-ac) 4-C	1000	3667
Jim Cloud, Inc., W. F. Neal-Shell (109-ac) 7	8000	3804
R. H. Dearing & Sons et al, L. L. Jones (20-ac) 3	10,000	3800
Devonian Oil Co.-Barnsdall Oil Co., Milstead 8	8500	3748
The Falcon Co., T. O. Mason (148-ac) 5	9500	3648
Humble O&R Co., M. Kangerga (333-ac) 21-A	7500	3716
S. A. Plowman (228-ac) 14	8000	3738
W. Shaw (73ac) 4	7500	3780
R. E. L. Silvey (240-ac) 13-A	9000	3764
R. E. L. Silvey (209-ac) 11-B	9600	3700
R. E. L. Silvey (209-ac) 12-B	8500	3683
J. E. B. Sneed (104-ac) 7	10,000	3775
Mattie Wooster (70-ac) 6	7200	3746
H. L. Hunt Prod. Co., Sue Hale 91-ac) 5	300	3758
V. E. Reid (120-ac) 6	1200	3712
Mid-Kansas O&G Co., H. C. & G. W. Burton (148.8-ac) 12	7200	3667
M. Kangerga 4, Tr. No. 1	11,000	3625
J. H. Sharp (482.67-ac) 16	8500	3664
Yandell Rogers et al, D. Bradford (10-ac) 4	2000	3684
E. W. Stewart Holdings, Inc., T. O. Wright (1-ac) 1	9000	3730
Sun Oil Co., A. Lee (147-ac) 4	1200	3661
Stanolind O&G Co.-Pure Oil Co., W. H. Siler (949.6-ac) 37	500	3731
W. H. Siler (949.6-ac) 38	2500	3673
Tidal Oil Co., M. Thompson (85-ac) 5-A	1500	3676
The Texas Co., A. S. Jarvis (81ac) 9-A	8400	3621
G. H. Vaughn (was Republic), L. P. Thrash (40-ac) 3	10,500	3787
Nat Wissman et al, G. W. Wilson (3½-ac) 2	8500	3776
KILGORE AREA—		
Atlantic Oil Prod. Co.--Byrd-Frost, Inc., W. Smith (39-ac) 6	9500	3593
Barnsdall Oil Co., T. H. Gill-Shell (83-ac) 2	1500	3621
Blue Star Oil Co., Sabine River 6-G, Tr. No. 6	8500	3538
Sabine River 6-K, Tr. No. 6	9000	3534
Sabine River 7-C, Tr. No. 7	10,000	3500
Gulf Prod. Co., J. T. Sexton (165-ac) 7	7200	3713
A. Spear 20	8400	3609
L. Hickman et al, W. A. Hindman (7-ac) 2	10,000	3642
Houston Oil Co., D. M. Peterson (36-ac) 4	9600	3679
Humble O&R Co., David Ladd 4-A	10,500	3714
S. S. Laird (568-ac) 22-B	6500	3630
S. S. Laird (568-ac) 23-B	6000	3621
M. E. Minor (123-ac) 6	8500	3744
H. Sexton (60-ac) 5-C	12,000	3748
E. R. Liner, Inc., J. C. Clayborn (31-ac) 2-E	4500	3681
Magnolia Pet. Co., H. P. Hale (50-ac) 2	7500	3573
R. H. Roland (Warehouse) 3	750	3575
Harry S. Moss et al, F. Marshall (39-ac) 5	4000	3585
E. J. Raddatz & L. L. Travis, Sabine River 5, Tr. No. 8	5000	3480
S. B. Raitman (was Deep Rock Oil Co.) A. L. Jeffrey (29-ac) 2	9000	3772
Republic Prod. Co., J. B. Watson (25-ac) 3	8500	3585
Rhoads Drl. Co., Sabine River 11, Tr. No. 4	8400	3555
Sabine River 6, Tr. No. 5	9000	3534
Ruston Drl. Co., Sabine River 3, Tr. No. 3	8000	3560
Shell Pet. Corp., J. S. Elder (50ac) 5-A	10,500	3604
W. W. Elder (196-ac) 16	9600	3578
J. B. Watson (285-ac) 24	7500	3619
E. W. Willoughby (57-ac) 6	9300	3590
Sinclair Prairie Oil Co., A. A. King (337-ac) 21-B, Tr. No. 1	8200	3510
A. A. King (337-ac) 22-B, Tr. No. 1	8000	3510
A. A. King (337-ac) 23-B, Tr. No. 1	8500	3488
A. A. King (337-ac) 25-B, Tr. No. 1	9000	3508
A. A. King (147-ac) 12-B, Tr. No. 5	8600	3466
A. A. King (147-ac) 13-B, Tr. No. 5	9000	3470
Standard Oil Co. of Kansas, J. A. Knowles (22-ac) 4	9100	3607
Steen Drl. Co., W. D. Lacy-Shell (163-ac) 4	11,000	3577
Sun Oil Co., Calvin Brown (100-ac) 7	9500	3620
The Texas Co., R. B. Walls (104-ac) 6	7000	3683
LONGVIEW AREA—		
Amerada Pet. Corp., M. Killingsworth (100-ac) 7	12,000	3629
Atlantic Oil Prod. Co., P. C. Castleberry (37-ac) 5	10,500	3660
J. M. Moore (456-ac) 30	11,000	3534
J. M. Moore (456-ac) 34	11,000	3529
Atlantic-Stanolind O&G Co., Fishburn (140-ac) 7	9600	3520
Corbin-R. Y. Walker et al, A. H. Tubbs (51-ac) 1	Junked	3596
R. H. Dearing & McBride, Elmira Chapel 4	11,000	3615
LouisGodlin et al, L. T. Mackey (31-ac) 2	2300	3704
Groneman & Doran, State (Tr. No. 12) 1	12,000	3449
Gulf Prod. Co., M. O. Sheppard (335ac) 22	13,000	3514
Humble O&R Co., T. M. Armstrong (155-ac) 8	10,000	3610
A. Carter (90-ac) 9-X	1000	695
T. B. Harris (175-ac) 12	8000	3588
Della Johnston 9-A	14,000	3600
Mary Killingsworth (77-ac) 7	8500	3641
Mary Killingsworth (77-ac) 8	9000	3635
F. H. Killingsworth et al, State (Tr. No. 8)	10,500	3503
C. A. Lester & Duffield, J. Moore-Shell (66-ac) 3	9000	3579
Magnolia Pet. Co., E. H. Brawley (80-ac) 7	12,000	3518
Howard Hampton (160-ac) 8	9500	3676
E. Protho (5½-ac) 1	11,000	3641
Pelphrey Bros. & W. Hobson, Wheeler 1	9000	3612
B. F. Phillips et al, E. H. Brawley (50-ac) 2	2500	3697
Prince Bros. Drl. Co., H. M. Williams (37-ac) 6	9500	3640
Rhoads Drl. Co., J. M. Christian-Bond Trust Co. (5.2-ac) 1	10,000	3640
Shell Pet. Corp., Howard Hampton (169-ac) 8	11,000	3681
A. N. & V. King (160-ac) 9	8500	3590
J. Moore (350-ac) 20	8000	3567
J. Moore (350-ac) 21	7200	3555
J. Moore (350-ac) 22	7000	3566
J. Moore (350-ac) 23	8000	3563
T. B. Stinchcomb (94-ac) 8	12,000	3496
Simms Oil Co.-Leon Russ, Flewellen (200-ac) 10	9500	3689
Sinclair Prairie Oil Co., J. R. Williams (82-ac) 10	11,000	3641
Sun Oil Co., T. C. Gray 9	500	3652
The Texas Co., T. W. Lee (210-ac) 11	8600	3564
Yount-Lee Oil Co., Julia Snoddy (51-ac) 4-B	10,000	3549
VAN FIELD—		
Pure Oil Co., Sam Allen (30.6-ac) 2	4000	2950
W. F. Swain (40-ac) 8	8500	2962

Texas Permits

ARCHER COUNTY—R. N. Hamilton, Wichita Falls, S. C. Roddy, 50, 1, S 2, J. Poitevent sur, 150 ft from n and w lines. R. P. Dorian, Wichita Falls, W. H. Portwood, 80, 1, 2411 TE&L sur, 150 ft from n and w lines. Consolidated Oil Co., Wichita Falls, W. H. Portwood, 40, L1, 1581 TE&L sur, 150 ft from s and 783 ft from w line. Vigil Oil & Gas Co., Wichita Falls, H. F. Harmel, 100, 11, 2490 TE&L sur, 883 ft from n and 1570 ft from e line.

BOSQUE COUNTY—A. A. Martin, Fort Worth, W. R. Duke, 40, 1, B 54, N. J. Dobie sur, 1000 ft from n and 500 ft from e line.

BROWN COUNTY—C. C. Stephen, San Antonio, Guyer, 20, 2, No. 614 M. Flores sur, 570 ft from n and 400 ft from w line.

CHEROKEE COUNTY — Loring Oil Co., Pittsburgh, Penna., F. M. Swearinger, 55, 1, O. Lund sur, 330 ft from s and e lines.

CALLAHAN COUNTY — Jno. P. Byram, Abilene, M. Harris, 155, 1, S 114, E. T. Ry. sur, 1320 ft from n and 500 ft from e line.

CARSON COUNTY—Skelly Oil Co., Tulsa, Okla., E. Schafer, 640, 14, S 191, B 3, I&GN sur, 330 ft from s and w lines of sec.

CLAY COUNTY — J. C. Clower, Wichita Falls, S. E. Oliver, 200, 1, 2627 TE&L sur, 667 ft from e and 750 ft from s line.

CHAMBERS COUNTY—Sinclair Prairie Oil Co., Fort Worth, J. Wilburn, 250, 13, Griffin-Hodges sur, 725 ft from sw and 50 ft from nw line.

CALDWELL COUNTY—J. W. Kemp, Cameron, R. B. Vickery, 100, 1, S. Damon sur, 200 ft from ne and 790 ft from se line.

DUVAL COUNTY—Magnolia Pet. Co., Dallas, J. T. Johnson, 160, 5, Sec. 44 sur, 330 ft from w and 420 ft from s line; Hahl-Riley, 80, 1, S 40, J. Poitevent sur, 330 ft from center e li nw¼. L. W. Capps, Houston, Duval Ranch, 160, 4A, S 574, BS&F sur, nw of No. 3A; 5A, ne corner; 6A, nw corner; 7A, sw corner; Duval Ranch, 80, 4, S 576, BS&F sur, se corner. Whisenant, Trenchard & French Oil Corp., Laredo, C. W. Hahl, 30, 5, S 44, sw¼ sw¼ nw corner. L. F. Russ, San Antonio, C. W. Hahl, 40, 2B, Sec. 45 sur, 330 ft from n and e lines nw¼ se¼. J. F. Hornbeck, San Antonio, Duval Ranch, 40, 1, S 281, GC&SF sur, 150 ft from s and w lines. Texas Co., Houston, W. C. Riggs, 80, 3, S 46, D. Seago sur, 200 ft from n and e lines; C. W. Freer, 80, 1, S 45, J. Poitevent sur, 330 ft from s and w li s½ ne ¼; H. Wendt, 122, 2, S 42, W. N. Seago sur, 1049 ft from n and 330 ft from e line.

ELLIS COUNTY—Geo. Bessley, Ennis, F. Borek, 100, 1, Sec. 1, Pena sur, 800 ft from w and 350 ft from s li n½ sw¼.

FALLS COUNTY — Hamman Exploration Co., Houston, G. A. Herren, 60, 1, Manchaca-Chambers sur, 450 ft from n and 750 ft from e line.

FORT BEND COUNTY—Gulf Prod. Co., Houston, F. I. Booth, A, 1107, 8, S. Kennedy sur, 3312 ft from w and 467 ft from s line. H. M. Naylor, Houston, C. R. Whitmore, 20, 1, B 7, S. Kennedy sur, 238 ft from e and 330 ft from s line. Lowrie & Young, Houston, J. Brown, 1, Barrett-Harris sur, 1940 ft from w and 150 ft from s line. Humble Oil & Refg. Co., Houston, Lockwood-Sharp, B, 342, 7, Jno. Rabb sur, 2898 ft from w and 526 ft from s line; 8, 976 ft from n and 494 ft from e line.

GREGG COUNTY—Geo. W. Foster, Little Rock, Ark., S. Carr, 1, 1, M. McCurry sur, 124 ft from w and 87 ft from s line. Amerada Pet. Corp., Fort Worth, M. Killingsworth, 100, 9, H. Hathaway sur, 600 ft nw of No. 6. M. R. Newham, Ranger, J. Clayborn, 4½, 1, I. Baity sur, 149 ft from n and 456 ft from w line. Alma Pet. Corp., Oklahoma City, Okla., C. W. Watson, 33, 4, T. Allen sur, 330 ft from s and w lines. Iotex Oil Corp., Marshall, J. A. Knowles, 8, 2, Jno. Blair sur, 202 ft from n and 330 ft from w line. Pilot Oil Co., Dallas, T. B. Harris, 91, 10, W. H. Castleberry sur, e of Glasscock No. 1. Pennsylvania Oil & Refg.

Co., Dallas, M. Bonner, 18, 2, J. McRae sur, 330 ft from n and 296 ft from e line. Farlyn Oil Co., Houston, Rosedale Cem., 6, 1, Rigsby-Crosby sur, 127 ft from w and 257 ft from s line. Raddatz & Travis, Amarillo, Tract 8, 85, 6, Sabine River sur, 660 ft e of No. 5. Trans-State Oil Corp., Houston, W. Smith, 5, 2, J. S. Caruthers sur, 150 ft from n and e lines. Lion Oil & Ref. Co., El Dorado, Ark., J. R. Williams, 16, 2, P. McAnally sur, 270 ft from n and 340 ft from e line. Arkansas Fuel Oil Co., Shreveport, La., Taylor, B, 73, 1, Wm. Robinson sur, 330 ft from n and w lines; J. C. McKinley, 96, 7, Wm. Robinson sur, 660 ft n of No. 5; L. E. Orms, 56, 6, W. H. Castleberry sur, 375 ft n of No. 4, M. B. Hughey, 224, 13, J. Maffitt sur, 224 ft from e and 370 ft from s line; 14, 416 ft w of No. 13; 15, 660 ft w of No. 14; F. T. Rembert, 83, 6, Jno. Ruddle sur, 330 ft from s and e lines; E. M. Whatley, 44, 3, Wm. Robinson sur, 390 ft n of No. 2. Atlantic Oil Prod. Co., Dallas, Wm. Clayton, 40, 6, L. B. Outlaw sur, 769 ft from n and 663 ft from e line; J. M. Moore, 456, 36, F. W. Johnson sur, 2300 ft from e and 1860 ft from n line; 37, 3580 ft from e and 2100 ft from n line; 38, 3370 ft from e and 1900 ft from s line; 39, 3530 ft from e and 950 ft from s line; E. Burnside, A, 204, 17, F. W. Johnson sur, 300 ft nw offset to Rhoads No. 2; 18, 300 ft n offset to Rhoads No. 9; 19, 300 ft n offset to Rhoads No. 8; 20, 300 ft n offset to Rhoads No. 7. Shell Pet. Corp., Dallas, J. B. Watson, 285, 25, J. S. Caruthers sur, 450 ft n of No. 15; J. S. Elder, B, 73, 6, M. Van Winkle sur, 570 ft ne of No. 5; 7, 330 ft from s and e lines; H. F. Whitehurst, 60, 4, McKinney-Williams sur, 330 ft from n and e lines; J. Moore, 369, 4, F. W. Johnson sur, 330 ft from w and 205 ft from s line; M. H. Bivins, 113, 8, Caruthers sur, 330 ft from s and w lines. Texas Co., Shreveport, La., T. W. Lee, 210, 12, F. W. Johnson sur, 100 ft from s and w lines; 13, 1078 ft s of No. 11. Humble Oil & Refg. Co., Houston, H. Castleberry, 172, 3, B. N. Hampton sur, 330 ft from w and 135 ft from s line. Yount-Lee Oil Co., Beaumont, J. C. McKinley, B, 84, 7, D. Sanchez sur, 300 ft e of center of w line; J. C. McKinley, A, 63, 5, Wm. Robinson sur, 156 ft se of center of nw line; S. G. Smith, C, 56, 8, Wm. Castleberry sur, 430 ft sw of No. 4; A. Lee, 67, 5, Wm. Robinson sur, 251 ft from n and 750 ft from w line. Sinclair Prairie Oil Co., Fort Worth, A. A. King, B, 90, 4, Jno. Keiser sur, s offset to Raddatz No. 4. Tidal Oil Co., Kilgore, M. B. Hughey, 200, 16, Jas. Hilliard sur, 276 ft from n and 312 ft from e line. Sun Oil Co., Dallas, J. N. Campbell, 107, 10, G. R. Rains sur, 709 ft s of No. 9.

GRAY COUNTY—Texas Co., Pampa, J. B. Barrett, 160, 2, S 130, B 3, I&GN sur, 330 ft from e and 990 ft from n li nw¼; J. E. Williams, 480, 15, S 6, B 3, ACH&B sur, 330 ft from n and e lines of sec. Texoma Natural Gas Co., Amarillo, C. C. Yowell, 640, 1E, S 213, B B2, H&GN sur, 1320 ft from n and 1317 ft from e li sec. Gulf Prod. Co., Fort Worth, T. W. Catlin, 85, 2, S 57, B 3, I&GN sur, 660 ft s of No. 1. Ochiltree & Jeffries, Pampa, I. B. Hughey, 79, 1, S 129, B 3, I&GN sur, 330 ft from e and 360 ft from s line.

GLASSCOCK COUNTY — Empire Gas & Fuel Co., Tulsa, Okla., Hall, 160, 1, S 21, B 33, T 20S, 330 ft from n and e lines of nw¼.

GONZALES COUNTY—A. King, Houston, F. Ramzinski, 233, 1, Gonzales sur, 1021 ft from n and 1350 ft from e line.

HARDIN COUNTY — Paraffine Oil Co., Houston, Knight, 48, Knight sur, 100 ft from s and 30 ft from e line. East Batson Oil Co., Batson, Bates, 4, 5, F. H. Green sur, 140 ft from n and 30 ft from w line. A. M. Harris, Houston, F. J. Demeritt, 5, 1, S. Jackson sur, 135 ft from s and w lines.

HARRIS COUNTY — Rock Drilling Co., Houston, C. G. Hooks, 30, 2, No. 52, J. Hamilton sur, 50 ft from w and 650 ft from s line. Sun Oil Co., Beaumont, R. E. Burt, 292, 65, R. Dunman sur, 681 ft n of No. 59. Wilson Oil Co., Houston, Wheeler-Pickens, 2, 1, J. B. Stevenson sur, 75 ft from e and 40 ft from s li Blk. 20.

HENDERSON COUNTY—W. F. Bridwell, Tyler, C. T. Jackson, 25, 1, J. Levins sur, 150 ft from s and e lines.

HOWARD COUNTY—Jamison, Pollard & Forster, Coleman, G. O. Chalk, 160, 3, S 114, B 29, W&NW sur, 1494 ft from n and 180 ft from w line.

HUTCHINSON COUNTY — Hutchinson Drilling Co., Borger, Cockrell, 80, 1, S 3, B M21, T. C. Ry. sur, 330 ft from n and e lines.

JACK COUNTY—Geo. T. Sullivan, Dallas, E. J. Shawver, 165, 1, H. C. S. L. sur, 1140 ft from w and 1200 ft from n li Blk. 35.

JEFFERSON COUNTY — Stella Oil Co., Beaumont, Baker-McFaddin, 19, Blk. 22, J. A. Veatch sur, 50 ft from s and w lines of lot 8.

KAUFMAN COUNTY—Burton Drilling Co., Dallas, J. A. Nash, 100, 1, S 607, J, Travina sur, center.

MONTGOMERY COUNTY — Texas Co., Houston, E. Moody, 473, 3, Ransom House sur, 932 ft se of No. 2. Humble Oil & Refg. Co., Houston, A. A. Madeley, 5, Ransom House sur, 933 ft se of No. 3; C. L. Dobbins, 329, 4, Ransom House sur, 1072 ft e of No. 2; So. Tex. Dev. A, 29, T. C. Howell sur, 933 ft sw of No. 4; 28, 933 ft nw of No. 27; 30, T. Slade sur, 466 ft n of center of s line; O. L. Alexander, 20, B1, J. McHorse sur, 599 ft from n and 363 ft from w line; McDonald, 57, 1, J. A. Davis sur, 278 ft se of center of nw line; M. Hirsch, B, 120, 1, D. McIntyre sur, 409 ft from w and 323 ft from s line; 2, 466 ft from n and 408 ft from w line; M. A. Emory, 451, 1, No. 13, W. C. Ry. sur, 448 ft from w and 466 ft ft from s line; So. Tex. Dev., B, 1, C. T. Darby sur, 410 ft w of center of e line.

MATAGORDA COUNTY — Cockburn Oil Corp., Houston, H. B. Hawkins, 1500, 5, D. McCarthy sur, 2600 ft from sw and 2200 ft from nw li sur.

NUECES COUNTY—Gulf Port Oil Corp., San Antonio, T. H. Isensee, 235, 2, No. 404 sur, 330 ft from n and e lines.

ORANGE COUNTY—Birmingham Pet. Co., Orange, W. P. McGuire, 30, 1, B. Garner sur, 190 ft from n and 70 ft from w line.

PALO PINTO COUNTY — Brazos River Gas Co., Mineral Wells, W. C. Bridges, 204, 4, R. Clark sur, 525 ft se of No. 3.

RUSK COUNTY—B. H. Rogers, Oklahoma City, Okla., H. C. Maxwell, 27, 2, F. Cordova sur, 330 ft from n and w lines. Adams & Rowe, Shreveport, La., W. L. Friar, 74, 1, Henderson-Smith sur, ne corner. Ortiz Oil Co., Wichita Falls, H. M. Hale, 40, 3, T. J. Moore sur, 17 ft from s and 820 ft from e line. Louisiana Oil & Refg. Co., Shreveport, La., H. Mayfield, 40, 5, H. Hobson sur, 330 ft from w and 355 ft from s line. Henderson & Holden, Wichita, Kansas, M. R. Terrell, 17, 2, W. R. Cooke sur, 330 ft from n and w lines. W. J. Gamble, Dallas, H. C. Miller, 5, 1, J. Ximinez sur, center. W. F. Reynolds, Henderson, J. H. Henson, 20, 2, J. Ximinez sur, 210 ft from s and w lines. Tatum, Olive & Spradlin, Corsicana, I. Brightwell, 10, 3, R. W. Smith sur, 150 ft from w and 225 ft from s line. Ward Oil Corp., Ardmore, Okla., C. C. Giles, 41, 6, M. J. Pru sur, 827 ft from n and 350 ft from e line. J. C. Sanford, Tyler, E. L. Pinkston, 3, 1, J. B. Cadena sur, 326 ft from w and 105 ft from s line. W. T. Bodine, Dallas, G. W. Cooper, 20, 1, J. C. Vina sur, 476 ft from n and 348 ft from w line. Sherman Hunt, Tyler, W. H. Fredericks, 12, 1, W. G. Parker sur, 170 ft from n and 296 ft from w line. W. W. Caves, Henderson, N. Cooper, 10, 1, T. J. Moore sur, 150 ft e of center of w line. Jenkins Oil Corp., Dallas, Wm. Jobe, 109, 12, J. Ximinez sur, 400 ft e of No. 8. Ward Oil Corp., Ardmore, Okla., E. S. Thrash, 200, 14, F. Cordova sur, 300 ft from w and 60 ft from s line. A. P. Cary, Tyler, Redwine, 21, 1, J. Ximinez sur, 150 ft from n and w lines. Droppleman Drilling Co., Tyler, F. J. Cox, 24, 2, Bears & Darley sur, 990 ft from w and 250 ft from s line. Lide Rowe Oil Co., Shreveport, La., C. V. Young, 30, 5, M. J. Pru sur, ne corner. Hunt Prod. Co., Tyler, R. J. Vinson, 59, 5, Smith & Darley sur, 1708 ft from s and 700 ft from e line. C. L. McMahon, Tulsa, Okla., D. Wills, 56, 3, W. P. Chisum sur, 666 ft e of No. 4; 4, 666 ft e of No. 5; 5, 666 ft e of center of w line. Stanolind Oil &Gas Co., Fort Worth, W. H. Siler, 983, 39, M. Walker sur, 330 ft from n and e lines of survey. Humble Oil & Ref. Co., Houston, C. H. Hedge, 103, 1, J. C. Barnett sur, 330 ft from s and w lines; I. W. Wooley, 201, 13, F. Cordova sur, 1155 ft from e and 1853 ft from s line; E. McDavid, 8, 2, T. H. Smith sur, 330 ft from n and w lines; H. White, B, 133, 6, J. M. Scott sur, 778 ft from e and 330 ft from sw line; 5, 2573 ft from n and 600 ft from e line; M. Kangera, A, 330, 23, M. J. Pru sur, 323 ft e of No. 3. Texas Co., Shreveport, La., W. W. Henry, 229, 13, W. J. Roane sur, 761 ft w of No. 8; A. W. Kersh, 211, 12, E. B. Fowlks sur, 775 ft s of No. 2; W. W. Henry, 229, 14, W. J. Roane sur, 1585 ft from w and 370 ft from n line; 15, 375 ft from n and 3143 ft from w line. Magnolia Pet. Co., Dallas, C. C. Still, 105, 8, M. McCabe sur, 330 sw of No. 7.

SMITH COUNTY—W. R. McMillan, Tyler, J. P. Lanham, 2½, 1, J. Vargas sur, 168 ft from n and 210 ft from e line.

STARR COUNTY—Los Olmos Oil & Gas Co., Harlingen, Kelsey-Bass, 2590, 35, S 7, Por. 75-76-77 sur, 40 ft from e and 300 ft from s li nw¼; 36, 340 ft from e and 300 ft from s li se¼ nw¼; 37, 640 ft from e and 300 ft from s li se¼ nw¼; 38, 100 ft from e and 600 ft from s li se¼ nw¼; 39, 400 ft from e and 600 ft from s li se¼ nw¼; 40, 700 ft from e and 600 ft from s li se¼ nw¼; 41, 150 ft from e and 420 ft from n li se¼ nw¼; 42, 450 ft from e and 420 ft from n li se¼ nw¼; 43, 750 ft from e and 420 ft from n li se¼ nw¼; 44, 200 ft from e and 120 ft from n li se¼ nw¼; 45, 500 ft from e and 120 ft from n li se¼ nw¼; 46, 800 ft from e and 120 ft from n li se¼ nw¼. Dr. R. McCormick, Waco, Kelsey-Bass, 40, 1, S 7, Por. 75-76-77 sur, 150 ft from n and e li se¼ sw¼. Bryan & Tharp, McAllen, A. Guerra, 5000, 1, B 6, San Jose sur, 560 ft from n and 3750 ft from e line. Sioux Oil Corp, Rio Grande City, Doyno, 14, 1, Sh. 77A, Por. 81, Blk. 4, 150 ft from e and 559 ft from s line. Jno. A. Pope, Rio Grande City, H. Gonzales, 68, 1, S 339, HE&WT sur, 500 ft from w and 2287 ft from s line. E. H. Stickney, Rio Grande City, H. Gonzales, 80, 1, S 339, HE&WT sur, 300 ft from s and e lines. Chancellor & Buchanan, Edinburg, Fernandez, 1, Por. 99 sur, 1006 ft from w and 11,600 ft from s line.

SHACKELFORD COUNTY—Gilman & McMurray, Cisco, E. A. Jeter, 350, 7, S 15, No. 11 T&P sur, 160 ft from s and w lines.

UPSHUR COUNTY—Frank Buttram, Oklahoma City, Okla., D. F. Smith, 79, 1, C. H. Cooper sur, 330 ft from n and 701 ft from e line. Refugio Oil Corp., Houston, B. H. Read, 196, 2, T. Hopkins sur, 330 ft from s and e lines; 3, 516 ft nw of No. 1. H. W. Elliott, Fort Worth, W. H. Reed, 24, 1, M. Mann sur, 330 ft from s and 411 ft from e line; 2, 330 ft from n and 411 ft from e line. Sun Oil Co., Dallas, Jno. Hargraves, 200, 11, M. Mann sur, 330 ft from n and 1440 ft from w line.

VAN ZANDT COUNTY — Humble Oil & Refg. Co., Houston, R. S. Blake, 201, 15, J. Walling sur, 250 ft from s and w lines. H. W. Peden, Houston, W. S. Brannon, 45, 1, J. Goodman sur, 300 ft from n and w lines.

WEBB COUNTY—O. W. Killam, Laredo, W. Breckenridge, 70, 1, S 77, B 9-11, J. A. Flippen sur, 680 ft from e and 3122 ft from n line. South Texas Oil Co., Laredo, Laurel, 640, 3, Sec. 270 sur, 344 ft from n and 450 ft from w li Blk. 10.

WHARTON COUNTY — Cullen & West Prod. Co., Houston, L. M. Hawes, 148, 1, G. Singleton sur, 300 ft from nw and sw lines; J. D. Hudgins, 319, 1, A. Jackson sur, 400 ft from s and e lines

WICHITA COUNTY—J. L. Swanner, Wichita Falls, Williams-Parker, 160, 8, B 15, P. P. C. S. L. sur, 450 ft from w and 150 ft from s line.

WOODS COUNTY — Sinclair Prairie Oil Co., Fort Worth, Jno. Saner, 445, 1, J. M. Chandler sur, 330 ft from n and w lines of Blk. 19.

YOUNG COUNTY—W. H. Dyer, Graham, A. K. Joplin, 80, 1, N. Lynch sur, 150 ft from n and 550 ft from w line. D. L. Wolf, Olney, J. W. Culbertson, 20, 1, 242 TE&L sur, 150 ft from n and 520 ft from e line. King Royalty Co., Wichita Falls, J. F. Larimore, 164, 42, 2246 TE&L sur, 1100 ft from w and 150 ft from n line. Brazelton Bros., Graham, Belknap, 40, 4, 21, TE&L sur, 320 ft se of No. 3. Frank Schow, Fort Worth, E. C. Keith, 40, 2, 267 TE&L sur, 150 ft from e and 450 ft from s line.

ZAPATA COUNTY—Hamilton, Brower & Crews, Laredo, Slator, 160, 1, J. Borrego sur, 2111 ft from sw and 1980 ft from se line of Blk. 1.

SOUTH TEXAS

Strike Gives Tuleta Abandoned Wells New Chance If Drilled 200 Feet Deeper. Three Bexar Wildcats Show.

EARL POST, *Staff Representative, San Antonio*

Tuleta Extension Well Is Producing From New Level

San Antonio.—Dirks Brothers' Fee 1, Tuleta field, flowed 189 barrels of oil in 12 hours through five sixteenths-inch choke, showing about 550 pounds pressure, and making less than five per cent salt water.

The well, which is producing from Yegua, extends the field a half-mile west and opens a new producing horizon. Originally it was drilled to 4098 feet and was plugged back seven feet. Top of the producing sand is at 4276 feet.

It is expected that a number of abandoned wells which stopped 200 feet above the new level, will be deepened as a result of this strike.

Refugio County Well Looks Better After Allowed Flow

San Antonio, Texas.—Humble Oil & Refining Company's M. V. O'Connor 3, northeastern Refugio County, looked much better late in the week after being allowed to flow several days. The gauge on it for 24 hours ending November 18 at 7 a.m., showed 56 barrels with 10 per cent salt water and b.s., while the gauge ending at the same time November 23 was 203 barrels and one per cent salt water and b.s. It is flowing through choke.

This well topped a sand at 3136 feet and drilled to a total depth of 3148 feet, where it showed for a producer. The oil is 21 gravity. It is 3930 feet southeast of O'Connor 1 and opens a new sand and a new pool for that part of Refugio County.

Three Bexar County Tests Show Promise

San Antonio, Texas.—Three wildcats in Bexar County give promise of production and are being tested.

Robert C. Hill's F. Schell 1, located in Section 234, Perretaux survey, in the northern portion of the county, is at a total depth of 836 feet. A string of 6¼-inch casing has been set to 822 feet and preparations are being made to test. It has an elevation of 1154 feet.

Five miles southeast of Converse and near Randolph field, R. V. Hill encountered a seven-foot horizon in the basal Taylor and is reaming to set casing. The total depth is 399.4 feet. While drilling into this horizon, the well is reported to have gassed considerably and shown considerable oil. It is the J. F. Shepherd Survey 314.

M. E. Trussell's R. T. Pruitt 1, located in County Block 4299, about 12 miles southwest of San Antonio, cored 32 feet of sand to a total depth of about 435 feet and has set casing. The well showed considerable oil and gives promise of making a fair producer. It is about 2500 feet southeast of the operator's Carruthers 1, which recently made a three-barrel well from 1005 feet.

San Antonio, Texas.—Los Olmos Oil & Gas Company is carrying on a rather extensive drilling compaign on its Kelsey Bass lease in the Los Olmos Shallow pool, Starr County. The company completed three wells, Nos. 30, 31 and 32, for an average of 40 barrels each from the 450-foot sand and is starting three more.

Webb County Deals Involve Increase of Development

San Antonio, Texas.—Laurel pool, Webb County, gains much interest with several important deals involving immediate development. A half-dozen operations are underway in the field with expectations of an immediate increase.

Nearly one half-mile north and west of the field, Hamill & Hamill's S. Lloyd 1, Block 15, Survey 23, got the sand very high at 2206-10 feet and showed only a small amount of oil. Montex Oil Company has set casing atop the sand on B. Rosenberg 1, Block 5, Survey 271. South Texas Oil Company also has set casing and is preparing to drill in on Laurel (State) 2, Block 10, Section 270..

Among the new locations during the week in the area are: Dyck Oil Company's Laredo Oil 1, Block 100, G & V Survey; Sal-Mar Oil Corporation's Vela 1, Block 16, Survey 1011; South Texas Oil Company's Laurel 3, Block 10, Section 270.

South Texas Field Developments

Completions

Company, Well and Location	Initial Production Bbls.	Depth
BEE COUNTY—		
United Prod. Co.'s Geo. Ray 33, S. Morris sur	75	3681
CALDWELL COUNTY—		
Cargill et al's Demeron 1, D. Cooper sur	100	1909
DUVAL COUNTY—		
Highland Oil Co.'s A. Lundvall 3, Sec. 42	800	2361
Mag. Pet. Co.'s A. A. Broadbeck 2, Sec. 44	720	2308
Sarnosa Oil Co.'s A. Weil 3, Sec. 130	200	2421
Southwest Dr. Co.'s R. Wendt 6, Sec. 43	650	2305
LIVE OAK COUNTY—		
Brown & Whitting's A. Laster 1, S. Hays sur	*	1100
NUECES COUNTY—		
Gulf Coast Oil Co.'s Bessie Elder 2.	200	4564
Gulf Port Oil Co.'s J. M. Luby 1, Blk. 1, Sec. 2	*	5008
McMULLEN COUNTY—		
Levefre & Ballard's L. Jacob 1, W. D. Bedham sur	*	1205
REFUGIO COUNTY—		
Humble O&R Co.'s O'Conner 3, F. Rios sur	203	3148
STARR COUNTY—		
H. C. Carter's Gonzales 1, Blk. 62, Por. 67-71	*	435
Los Olmos O&G Co.'s Kelsey Bass 30, Share 7	40	448
Kelsey Bass 31, Share 7	40	440
Kelsey Bass 32, Share 7	35	451
Smith & Porter's Lopez 1, Share 65, Por. 80	*	1515
Porter & Hornaday's Kelsey Bass 1, Sec. 7	*	461
TRAVIS COUNTY—		
Fritz Fuch's Sweedish 1, Thomas Smith sur	*	2005

Wildcat Drilling Report

(Wells shut down not included)

ARANSAS COUNTY—F. E. Kistler, Trustee's McCampbell 1, blk 58, lot 1, McCampbell ranch lands, dk.

BANDERA COUNTY—E. A. Parkford et al's Duke 1, sec 7, GH&SA sur, prep to spud. F. A. Brown's R. B. Watson 1, sec 70, fsh 350 ft, last rept.

BASTROP COUNTY—American Liberty Oil Co.'s L. Davis 1, G. N. Stovall sur, loc. Marts & Beavens' Smith 1, J. Burleson sur, dr 1975 ft, Austin chalk. P. H. Wilson et al's R. M. Randle 1, Bernard Bymer sur, dr 2485 ft, hard shale.

BEE COUNTY—Dirks Bros.' Fee 1, sec 3, Tuleta, snd 4276-4302 ft, show considerable 44 gravity oil, rock in with gas. Grisham et al's A. J. Hill 1, sec 11, W. G. Ragley sur, dk. Gulf Coast Oil Co.'s Hicks-Hall 5, blk 2, Uranga sur, Normanna, snd 3616-21 ft, show oil, td 3622 ft, set cas, woc. B. Mauldin's J. L. Mauldin 3, Geo. Kerr sur, Pettus, snd 3871-80 ft, test 12 jts oil, 12 jts mud set cas 3871 ft, woc. Nichols & Bruner's Hedefels 1, John Ryan sur, 3 mi se Beeville, gas snd 2636 ft, test dry, dr deeper. John O'Neill's J. P. Harris 1, sec 2, Ragley sub, J. Uranga sur, Tuleta, orig abnd 4109 ft, to deepen. L. L. Smith's J. P. Harris 1, Tuleta, orig abnd 4168 ft, may deepen. Tabor, O'Neill & Howeth's J. P. Harris 1, blk 13, sec 13, Tuleta, snd 4108-19 ft, run dst. United Prod. Co.'s Geo. Ray 44, S. Morris sur, N Pettus, snd 3675-81 ft, flow 40 bbls, not fully completed. Wallace & Bowles' Harris 1, sec 13, blk 12, Tuleta, coring 4071 ft.

BEXAR COUNTY—Wm. V. Ballard's S. A. Land & Dev. Co. 1-A, I. Perez sur, fsh 970 ft. Eckert & Son's L. Brehm 3, Boquar sur, Eckert, completing 725 ft; L. Brehm 4, Boquar sur, lcn. Gatlin Oil Co.'s I. A. Beck 15, J. Montez sur, Eckert, sp. Robt. C. Hill & Scruggs' F Schell 1, sec 234, Perretaux sur, td 836 ft, set 6¼-in cas 822 ft, prep to test. R. V. Hill's M .& A. Boeck 1, J. F. Shepherd sur No. 314, td 399.4 ft, had 7 ft snd in basal Taylor, show for prod, ream to set cas. Johnson Bros' Elsie Janszen 1, J. Montez sur, dr 300 ft. M. E. Trussell's R. T. Pruitt 1, county blk 4299, td abt 425 ft, cored 32 ft snd, show oil, cas set, dr in. H. G. Venable's F. Dulling

2, Eckert, td 1500 ft, plugged to 1100 ft, top snd 1060 ft, prep to dr in.

CALDWELL COUNTY—Bosrose O&G Co.'s Walker 3 (2-A) S. Seal sur, Dunlap area, deepening from 2255 ft. Louis Crouch's S. Nealson 1, John B. Gray sur, mov on. J. M. Dickson's (Slam Bang Const. Co.) W. T. Mooney 1, S. Seal sur, Dunlap, top chalk 2240 ft, td 2265 ft, set cas 2165 ft, woc. E. D. Herne's N. C. & P. W. Jeffrey 1, James Geo. sur, set sur, wait on water. E. L. Hope & Joe Cole's M. August 1, A. Floyd sur, prep to sp. J. W. Kemp's Geo. Vickery 1, td 2000 ft, plugged to 1750 ft, woc. Jimmie Lanning's Barber 1, S. Damon sur, dr 2270 ft. D. V. Smith et al's (Webster O&G Co.) McMahon 1, James Pinchback sur, dr 200 ft.

DUVAL COUNTY—Byrd Oil Corp.'s P. T. Wright 4, sec 101, ru; P. T. Wright 4, sec 101, N. Govt. Wells, loc. Capps & Smith's Duval Co. Ranch Co. 3-A, sec 594, Sarnosa, ru; W. R. Peters 1, sec 178, sp; J. E. Williams 1, sec 7, B 1, ACH & B sur, loc. W. T. Daniel's F. J. Smith 1, sec 46, mov on. Duggan & Smith's Sutherland 2, sec 511, dr 2400 ft. Hamill & Hamill's C. W. Hahl 5, sec 42, sp; C. W. Hahl 6, sec 42, lcn; C. W. Hahl 7, sec 42, lcn; C. W. Hahl 8, sec 42, lcn. Highland Oil Co.'s A. Lundvall 4, sec 42, mov on. John Hornbeck's Duval Ranch 1, sur 281, e mi sw SRC pool clear lcn. Humble O&R Co.'s P. E. White 9, sec 58, lcn; C. W. Hahl 1, sec 74, N. Govt. Wells, clear lcn. Mag. Pet. Co.'s J. T. Johnson 5, sec 44, sp; J. T. Johnson 6, sec 44, lcn; J. T. Johnson 7, sec 44, lcn; J. W. Riley 1, sec 45, mov on. Payne & Vernon's A. Roach 1, blk 7, sec 457, prep to sp. Pet. Producers (Central Prod, Inc.) C. W. Hahl 1, sec 42, mov on. Leon Russ et al's Hahl 2, sec 45, sp. SR & C Oil Corp.'s Duval Ranch 1, sec 192, lcn. San Diego Oil Co.'s Riley 4, sec 46, lcn; Riley 5, sec 45, mov on; L. Bennett 2, sec 44, sp. Sarnosa Oil Co.'s A. Weil 3, sec 130, Sarnosa, snds 2374-80—2394-2400—2412-21 ft, flowing 100 bbls, clearing self; A. Weil 4, sec 130, clear lcn. C. P. Scott's J. W. Kidd 1, sec 56, ru, prep to sp. Stanley Smith et al's C. Pena 1, sec 79, lcn. Southwest Dr. Co.'s R. Wendt 4, sec 43, prep to mov on; R. Wendt 7, sec 43, to make lcn. Sun Oil Co.'s Duval Ranch 1, sec 78, DI & A sur, show sw 2383 ft, dr ahead; Cano (Cuellar) 2, sur 576, Sarnosa, dk up, to move lcn. Texas Co.'s Billings (H. Wendt) 2, sec 42, lcn; C. W. Freer 1, sec 45, lcn. Whisenant-Trenchard & French Oil Co.'s C. W. Hahl 5, sur 44, Rosita townsite, mov on.

FRIO COUNTY — Amerada Pet. Corp.'s Halff & Oppenheimer 1, W. F. Halsel sur, 12 mi sw Pearsall, dr 4802 ft.

GILLESPIE COUNTY—Rod le Gra, Inc.'s W. H. Stevens 1, sec 969, AB&M sur, dr 90 ft.

GOLIAD COUNTY—Gulf Prod. Co.'s Joe O'Conner 3, move on. Sam Vanderweiss' Kaufman 1, Viciente Ramos sur, dk.

GONZALES COUNTY — Dave Watson & Pat Armstrong's Cardwell 1, Byrd Lockhard sur, prep to sp.

GUADALUPE COUNTY—B. W. Brock et al's Ogletree 1, Robt. Smith sur, northeast of Luling field, td 1805 ft, bailing, show oil. W. A. Scrutchin's S. J. Loman 1, sec 1, blk. 1, S. Barnes sur, move on machy. J. T. Stover's P. A. Hoffman 1, J. G. King sur, re-dr 2100 ft. Suttle et al's Halm 2, Jose Kent sur, dr 1735 ft. Tong & Altgelt's H. Rahe 1, Mose Baker sur, midway between Marion & McQueeny, dr 415 ft. Walton et al's Dan Darling 1, Ben Fuqua sur, dr 300 ft.

JIM HOGG COUNTY—H. C. Cate 1, Leyendecker 1, blk 10, sur 143, dr 735 ft. Clark & Cowden's W. Allen 1, sec 49, show oil 2395 ft. Cole Pet. Co.'s W. P. Allen, sec 13, Halmuch Cub No. 1, sp (last rept.) D. C. Dewitt's T. Gomez 1, sec 12, dr 2275 ft.

JIM WELLS COUNTY — Humble O&R Co.'s Fuhrman 1, Phillip Sacks sur, move on machy, dk up. F. A. Lain's V. Porter 1, tract 25, test sulphur water 3172 ft, dr deeper. J. E. Walsh et al's W. D. Wade 1, BB, Allen sur, lot 2, change rig.

KARNES COUNTY—Porter et al's Ingram 1, Carlos Martinez sur, coring 2977 ft. A. E. Edmiston's G. W. Cross 1, M. N. Reed sur, move in rig. Tippett & Mull's Smith 1, Francis Haskins sur, prep to sp.

KENDALL COUNTY—Verlans Trust Co.'s W. Werner 2, sec 782, blk 3, move on.

KERR COUNTY — Eastland Oil Co.'s J. Love 1-C, sec 1595, CCSD&RGNG sur, dr 1345 ft. Van Duyn & Moore's R. W. Nowlin 1, J. E. Bettner sur No. 99, dr 375 ft, Verde O&G Co.'s J. D. Witt 1, sec 1923, Hamilton sur, to deepen from 118 ft.

LA SALLE COUNTY—Interstate Oil Ind, Inc.'s, J. F. Mayes 1, blk 20, I&GN sur No. 19, dr around 3000 ft.

LIVE OAK COUNTY—Live Oak Pet. Co.'s J. Pointavent sur, between Whitsett & Fant City, dr 1720 ft. M. W. R. Oil Co.'s W. C. Ohlendorf 1, blk 25, SGI sur, dr 130 ft.

MAVERICK COUNTY—Kivaga Oil Co.'s 1, sur 44, making lcn.

McMULLEN COUNTY—Jacob, Buzzini & Pickett, Inc.'s, Jacob 8-A, W. H. Jacob sur No. 8, dr 1000 ft, snd 953-99 ft, show oil and sw; Jacob 10-A, W. H. Jacob sur No. 8, dr 86 ft. V. G. Schimmel et al's W. E. Wulf 1, sec 65, Two Rivers sur, show gas and sw 1000 ft, now dr 1320 ft. C. C. Shumway's Shiner 1, blk 45, new Shumway sur, temp sd 320 ft. Skinner & Bailey's F. H. Burmeister 1, blk 1, GH&H sur, sec 14, sd 820 ft.

MEDINA COUNTY—James E. Greenlee's F. Fasseler 1, sec 799, L. G. Harrison sur, snd 1215-30 ft, show oil, dr in. W. L. Umburn's P. Jungman 2, N. B. Rogers sur, lcn; P. Jungman 4, N. B. Rogers sur No. 33, snd 795-816 ft, completing.

MILAM COUNTY—Ed Clark's Pritchard 1, F. Ernest sur, sp.

NUECES COUNTY — Capps & Smith's Hutchins 1, Geo. Frank sur 416, set sur cas, woc. Gibson Oil Co.'s R. Morgan 1, BS&F sur No. 405, dr 4200 ft. Gulf Port Oil Co.'s Frank Bliss 3, J. W. Stevens sur, sec 406, lcn; Isencee 1, C. Land sur No. 404, dk; Isencee 2, C. Land sur No. 404, set 451 ft sur cas, re-dr. Miller et al's Harney 1, Gregoria Frias sur, ru. Geo. Noble et al's Home Land Syndicate 1, blk 18, sec 12, lcn. Saxet Gas Co.'s J. Dunn 9, E. Villareal sur, snd 4070-81 ft, test 8 fourbles oil, set cas, woc. O. R. Seagraves' Perkins & Legasse 1, blk 22, Shepherd sur, td 3145 ft, blew in while tools were being brought out of hole 11-17-32, running wild from one of shallower gas sands, cratered, caught fire, still burning. Titus & Calloway's Perkins & Legasse 1, blk 26, H. B. Shepherd sur, coring snd 4405 ft; Perkins & Legasse 2, blk 25, H. B. Shepherd sur, re-dr 4072 ft after being shut down acct fire in another well; Perkins & Legasse 3, blk 25, Shepherd sur, ru; R. Morgan 1, sec 405, dk; Hutchins 1, blk 30, H. B. Shepherd sur, dr 3485 ft.

STARR COUNTY—Adams & Modest's B. W. Wood 1, Por. 80, sp. Austin & Reynolds' Kelsey Bass 1, sec 4. Por. 75-76-77 ru B. & B. Oil Co.'s Kelsey Bass 1, Por. 87, 5 mi se Rio Grande City field, dr 2933 ft, black and brown shale. D. H. Carpenter's Salinas 1, Share 85, Por. 38-39-40, dr 2100 ft. W. P. Chancellor's A. Guerra 1, No. 5 San Jose sur, dr 600 ft. V. V. Combs' Kelsey Bass 1, sec 6, Por. 75-76-77, lcn. Great Plains Oil Co.'s (Jim Cloud) Sanches 1, sur 344, sp. Dr. J. N. Goodwin's Kelsey Bass 1, sec 2, Por. 86, prep to deepen from 1860 ft. Goodwin & Yantis' Seaburg-Geo. & Taylor 1, Por. 75, sur 3, dr 385 ft. J. E. Harper & Co.'s E. Salinas 1, Por. 75, share 16, lcn. A. C. McGahney's Fernandez Bros. 1, Por. 99, ¾ mi n Rio Grande, move on. W. T. Gillmer & Travelers Oil Co.'s C. Ramos 1, sur 150, sp and sd. Boyd Jones' Garza 1, share 3, Por. 75, ru. Jones & Jeffries' H. Garza 1, share 26, lcn. Los Olmos O&G Co.'s Kelsey Bass 33, Por. 75-76-77, lcn; Kelsey Bass 34, dr 140 ft; Kelsey Bass 35, dr 200 ft. J. P. Moore & C. B. Van Matre's Seabury et al 1, Share 5, Por. 75, dr 400 ft. D. A. Miller et al's Madrigal 1, Share 5, Por. 67 to 72, dr 200 ft. R. A. Mitchell's Kelsey Bass 1, sur 8, Por. 75-76-77, dr 210 ft. J. W. Seward's F. Dawson 1, blk 6, share 3-A, Por. 70, lcn. C. L. Sinclair's Kelsey Bass 2, Por. 75-76-77, move on. Sioux Oil Co.'s Doyno 1, blk 4, Share 77-A, Por. 79-80-81. dk. Jeffries Lambert Dr. Co.'s Starr Co. Cattle Co. 1, blk 34, Por. 89, dr 1200 ft. L. G. Mundy's M. R. G. Salinas 1, Share 38-C, blk 12, Por. 80, dr 1460 ft. Tarver & Nance's Kelsey Bass 6, sec 76, blk 7, dr 385 ft. Keck & Keane's Kelsey Bass 2, sec 6, Por. 75-76-77, lcn. Wells-Fenniger-Miller's Lensgray 1, sec 7, Por. 75-76-77, dr 180 ft.

TRAVIS COUNTY — E. A. Field's B. H. Bloor 1, dr 1003 ft. Franklin et al's Reimers 1, sur 35, dr 200 ft. Fritz Fuch's E. B. Smith 1, L. Kimbro sur, move on.

VICTORIA COUNTY — Cullen & West's Keeran 2, M. de Leon sur, ru. Gulf Prod. Co. et al's Keeran 3, M. de Leon sur, dr 4500 ft. Houston Oil Co's W. T. Beck 2, Lot D, I. Ry. sur No. 26, dr 4000 ft. Slick-Seeligson Corp.'s McFadden 2, J. Varin sur, dr 6660 ft. Texas Co.'s A M. McFadden 5, J. A. McFadden sur, set 1163 ft. sur cas, re-dr. Union Oil Co.'s C. N. Keeran 2, M. de Leon sur, coring 5180 ft.

WEBB COUNTY—Foster Barnsley's (Associated) F. Webster 2, sur 684, Carolina Texas, td 2588 ft, ru to deepen. Dyck Oil Co.'s Laredo Oil 1, blk 100, GV Sur, lcn. J. E. Edwards' M. D. Slator 1, blk 72, Slator sub, J. V. Borrego grant, dr 200 ft. Hamill & Hamill's S. Lloyd et al 1, blk 15, sur 23, sand 2206-12 ft, show little oil, sd. O. W. Killam's Breckenridge 1, blk 9 & 11, sur 771, sand 1773-83 ft, show oil, set cas, woc. Montex Oil Co.'s B. Rosenburg 1, sec 271, blk 5, set cas, woc. Sal-Mar Oil Co.'s E. Vela 1, blk 16, sur 1011, lcn, South Texas Oil Co.'s Laurel 2, sur 270, blk 10, set cas top sand, woc; Laurel 3 (State of Texas), blk 10, sec 270, lcn.

ZAPATA COUNTY—Hamilton, Brewer & Crew's Slator 1, blk 1, sub of Slator Ranch, J. W. Borrego grant, lcn. Huff & Fudge's G. Uribe 1, blk 8, share 7, Part 6, Borrego Grant, coring 724 ft. H. Muckelroy, Jr.'s A. Trevino 1, sec 411, blk 10, sd 2370 ft. Newton et al's Flores 1, sur 249, dr 500 ft. F. J. Ossenbeck 1, Adelfonso Ramirez 1, Por. 18, lcn. C. B. Bunte's A. Gutierrez 1, tract 2, blk 5, B. F. Nixon sub, Por. 10, dr 1450 ft. Texas Co.'s Jennings 15, Blanco sur, dr 600 ft.

ZAVALLA COUNTY — Adair & Daniels' Gates 1, sur 13, dr 3245 ft.

Government Wells Shallow Area Drawing More Drilling

San Antonio, Texas.—North Government Wells, Duval County, interest centers around two developments. One is the drilling of the shallower portion of the sand where salt water was encountered in the lower series. Several locations have been made in the heretofore proven area and wells are being started. This is particularly in the southern and southeastern portion of the field, where C. G. Porter finished a pumping well from this upper level.

Another interesting portion of the field is to the southwest, where several extensions have placed many more acres into the probable producing area.

Offset drilling in the main field has been practically completed, so future work will undoubtedly be centered around the newer extensions.

Jim Hogg Well Cores Sand Showing Oil

San Antonio, Texas.—Clark & Cowden's Wilbur Allen 1, 4000 feet south and east of the company's Vela 1, Jim Hogg County, cored a sand at 2395 feet, which showed considerable oil. The well is 150 feet from the north and west lines of survey 49.

The Vela 1 was completed recently at 2270 feet, where it made a 6,000,000 cubic foot gasser, showing about 400 pounds pressure. The pressure has increased to around 600 pounds and it is spraying a small bit of oil.

GULF COASTAL FIELDS

Conroe With 57 Producers and 71 Drilling Is Field of Important Proportions; Polk County Same Start.

WM. V. GROSS, *Staff Representative, Houston, Texas*

Pledger Prospects Good; Test Due Early in Week

Houston.—The Pledger prospect, northwestern Brazoria County, Texas, will be given a test of its oil-producing possibilities early this week, possibly as soon as Monday, November 28, if plans of Danciger Oil & Refining Company in connection with its promising wildcat, W. S. Hunt 1, materialize as scheduled.

Late last week the company was preparing to move to the drilling site a supply of 4½-inch pipe, which was to be run into the well, from top to bottom, with a joint of screen on the lower end of the string. The hole had already been cleaned and put in good condition through fishing out screen which had been blown up into the casing November 19 in an original attempt to complete the well.

For testing this wildcat a string of 7⅝-inch casing was cemented at 6753 feet, and on November 19 a 22-foot section of screen was run to bottom, which was at 6782 feet, to determine the producing possibilities of oil sand logged from 6758 feet to the final depth. The screen was on the bottom of 131 feet of blank pipe, which was sealed into the casing. The crew then began washing the well, which commenced showing much gas and a trace of high gravity oil with the wash water, and finally blew the screen up into the casing. The screen has been fished out, however, and will be re-set.

Located 5220 feet south of the north line and 6500 feet west of the east line of the W. C. Carson survey, four miles east and a little south of the town of Pledger, and about nine miles west of the prolific West Columbia salt dome field, this promising wildcat test is on a 3350-acre lease block of Danciger Oil & Refining Company embracing the south three fourths of the Carson survey. It is in the east 1000-acre lease out of W. S. Hunt's 2600-acre tract. Hunt is a Houston attorney.

Danciger Oil & Refining Company drilled the above wildcat after having acquired the 3350-acre lease block from J. P. Hunnicutt and H. H. Stevenson of Houston and Pierce Withers of Wharton, Texas. Those three men obtained the leases originally and engaged Petty Geophysical Engineering Corporation of San Antonio to make a geophysical investigation of the area. Employing reflection seismograph shooting, the latter found evidence of a deep-seated salt dome, and on the strength of that geophysical work the leases were turned to Danciger Oil & Refining Company for development. The location on which W. S. Hunt 1 was drilled was selected by Petty Geophysical Engineering Corporation, the site being on the north or possibly the northwest edge of the sub-surface uplift which was pictured by the geophysical work.

Prior to the investigation which was made by the above geophysical firm, the Pledger area had been worked geophysically by various companies, but none had obtained evidence of sufficiently conclusive nature to be greatly interested. Companies which carried out geophysical exploration there included Humble Oil & Refining Company, The Texas Company, Marland Oil Company, and Gulf Production Company.

Danciger Oil & Refining Company's lease block is regarded, through the geophysical work on which it is based, as embracing the greater portion of promising acreage; but some adjacent leases are conceded to have important possibilities, including 200 acres held by Humble Oil & Refining Company and 250 acres by Mills Bennett Production Company.

While there have been no important deals in close-in leases since the Danciger wildcat began showing favorably, there has been some trading in royalties. On the 1000-acre lease on which the well is located W. S. Hunt has sold one fourth of his customary one eighth royalty to Danciger Oil & Refining Company and another to James House Bute of Houston.

Latest Iowa Producer Gets 900 Barrels On Initial

Houston.—Shell Petroleum Corporation now has three producing wells in the Iowa field, southern Louisiana, combined output of which is about 1500 barrels daily, all wells pinched down by chokes. There are two other completed oil wells in that new, deep Gulf Coast field, the latter being property of Magnolia Petroleum Company. The production is oil of about 41 gravity, and each of the five completed wells is slightly over 6900 feet deep.

The latest completion was Shell Petroleum Corporation's Fontenot 2, near the southwest corner of Section 7-9s-6w, on the Jefferson Davis Parish side of the line dividing that parish from Calcasieu. Late last week the well was reported flowing 900 barrels daily through a 16/64-inch choke.

Following completion of Fontenot 2, the Shell interests have begun rigging up for a third test on the same lease, offsetting Magnolia Petroleum Company's producer, Waite 2.

Second Polk County Test Checks Lower, Shows Oil

Houston.—Late November 25 an oil field appeared to be in prospect in the Schwab area of southern Polk County, which had previously been established only as a source of gas production. At that time the joint test of Dick Schwab and Shell Petroleum Corporation, Davis-Holmes 1, was showing oil and gas at 4347 feet from sand of the Cockfield formation, the producing horizon of the gas well which was recently completed as the discovery test of the area.

In the present drilling well the top of the Cockfield was encountered at 4304 feet, or about 107 feet lower than in the discovery well. Surface elevation of the well is 224 feet. It is reported to have logged top of the Hockleyensis at about 3590 feet.

This prospective field of Polk County is about eight miles south of Livingston and three miles south of the small Sunshine oil pool. It was thrown into the limelight a little over a month ago when Dick Schwab's Carlton-Davis 1, Augustine Viesca survey, was completed as a gas well with closed in pressure of 1800 pounds at 4239-4311 feet. The present test is 1050 feet southwesterly from that discovery well.

Conroe Has Developed Into Field of First Magnitude

Houston.—The Conroe field, Montgomery County continues intensely active with respect to field development, although production has been cut back through more widespread observance of proration.

On November 23 there were 57 producing wells in the fields, yielding 16,000 barrels per day, and field operations had increased to a total of 71, including locations and derricks along with wells drilling or rigging up. During the preceding one-week period nine wells had been completed, all as oil producers.

The field work is being done by 16 different operators, all but a few of whom are small companies or individuals, each operating one or a few rigs. Humble Oil & Refining Company by virtue of being by far the largest owner of leases in the field, is very con-

spicuous on the drilling reports, while The Texas Company and Tidal Oil Company are two other major concerns active in the field, each with several rigs running.

Crude oil output at Conroe sustained a decline of 9160 barrels in maintaining an average of 17,530 barrels daily from 51 flowing wells during the week ending November 15 because of the more strict adherence to proration rules. The field averaged 26,690 barrels from 44 wells the previous week, but the two wells of Alpha Petroleum Corporation were then flowing near capacity, while two offsets held by Humble Oil & Refining Company were also permitted to exceed proration quotas because of the former having a temporary restraining order against the railroad commission.

Humble Oil & Refining Company's South Texas Development Company 13, which was originally completed as a gas well, was added to the list of active producers last week through having developed a flow of 40 barrels of high gravity oil daily. Well Number 10 on the same lease, however, has been shut in because of having a high gas-oil ratio.

Continued Testing Brings Danbury Dome Failures

Houston.—Danbury salt dome, Brazoria County, controlled largely by Shell Petroleum Corporation, continued unproductive of oil when the named company recently ceased drilling Blakely-Winston 5, the test being abandoned at 5075 feet because of having gone into salt. Aside from the five wells on the Blakely-Winston lease, the company has drilled one other test at Danbury, on the Haury lease; but aside from two wells drilled below 5000 feet, the drilling has been limited to relatively shallow tests, less than 2500 feet deep.

Texas Gulf Coast Field Developments

Completions

Company, Well and Location	Initial Production Bbls.	Depth
CONROE—		
Humble O.&R. Co., Alexander A-1	2000	5152
Cartwright A-7	1500	5176
Pfaefflin 2	2500	5175
So. Tex. Dev. Co. 1, wo	1700	5176
So. Tex. Dev. Co. 19	2500	5176
So. Tex. Dev. Co. 20	2400	5168
So. Tex. Dev. Co. 21	2000	5164
S.O. of Kansas, O. L. Alexander 1	3200	5110
Texas Co., Eliz. Moody 1	800	5100
RABB RIDGE—		
Gulf-Humble, Lockwood & Sharpe A-9	1200	5300

Wildcat Drilling Report

(Wells shut down not included)

BRAZORIA COUNTY—Danciger Oil & Ref. Co.'s W. S. Hunt 1, 4 mi e Pledger, W. C. Coirson sur, set 7⅝ cas at 6753 ft, ran screen to test sand at 6758-6782 ft, began washing, made small amount oil with considerable gas, killed to put on new Christmas tree, washed again, flowed very small stream wash water with gas and trace of oil, pulled drill stem, screen apparently blew up into casing; operators plan either to pull screen and reset, or to set full string liner with screen on bottom. Gulf Prod. Co.'s Lockwood 1, Wiley Martin sur, midway between Damon Mound and West Columbia, dr 3935 ft shale. Gulf Prod. Co.'s American Nat'l Ins. Co. 1, Sandy Point prospect, E. R. Bradley sur, dr 2500 ft gbo. A. H. Parsons et al's J. D. Hughes 1, Halls Bayou prospect, A. L. D. Lewis sur, dr 2840 ft shale. Shell Pet. Corp.'s Blakely-Winston 5, Danbury dome, dr 4836 ft shale. W. D. Southerland et al's C. W. Chapman 1, Sandy Point prospect, Andrew Robinson sur, dr 5775 ft hard sand rock. Tri-Fin Oil Co.'s Moers 1, 6 mi sw Alvin, F. Moore sur, dr 2340 ft gbo.

BURLESON COUNTY—Poor Boy Oil Co.'s Polansky 1, 6 mi w Lyons, M. B. Lawrence sur, dr 2151 ft sand and shale. Sanson O&G Co.'s Duckworth & Gilley 3, P. Singleton sur, dr 2600 ft sandy shale.

CHAMBERS COUNTY — Pure Oil Co.'s Mayes 16, Lost Lake, dr 4100 ft shale. Yount-Lee Oil Co.'s Plummer 1, Sophie Plummer sur, ne cor of county, dr 1030 ft.

COLORADO COUNTY — Neuhaus et al's McBarnett 1, Q. K. Winn sur, dr 5155 ft sandy shale.

FORT BEND COUNTY — Reisinger's Joe Sitta 1, D. J. Bell sur, Long Point, dr 1055 ft rock. Magnolia Pet. Co.'s Hampil 1, n Rabb Ridge, H. Chrisman sur, dr 6179 ft shale.

GALVESTON COUNTY—Humble O.&R. Co.'s Elias V. Rosenkranz 1, 4 mi sw Hitchcock, Sarah White sur, dr 7119 ft shale.

GRIMES COUNTY—W. J. Brightwell's Combs 1, Bedias dist, Sab. Beauman sur, dr 5016 ft water sand.

HARDIN COUNTY — Republic Prod. Co.-Houston Oil Co.'s Ben Andrews Fee 1, 6 mi e Ariola dome, S. K. Vanmeter sur, dr 6195 ft water sand. S. Robichaux's McShane 1, Votaw prospect, 1½ mi ne Votaw, Benj. H. Hawkins sur, dr 2270 ft shale. Gulf Prod. Co.'s Kirby 1-A, Ariola dome, ½ mi nw discovery well, dr 5940 ft shale. Houston Oil-Republic Prod. Co.'s Ariola Fee Y-1, Ariola dome, dr 3750 ft shale; Z-1 dr 4510 ft shale. Republic-Houston Oil's Ariola Fee 2, dr 5980 ft sand. Joe E. Proctor's J. R. Bevil 1, 1½ mi w Sour Lake dome, Wm. Young sur, dr 2685 ft.

HARRIS COUNTY — T. V. Buchholv & Son's Miller 1, Arthur McCormick sur, near Deer Park, dr 1172 ft. Indian Hill Oil Co.'s W. L. Schweinle 1, near Huffsmith, Wm. White sur, dr 6040 ft sandy shale. Dr. Lilly et al's Wilson Hunt 1, W. Ritchie sur, dr 1060 ft sand.

JASPER COUNTY—Gulf Prod. Co.'s Miller Vidor 1, Sarah Gray sur, e bank Neches river, dr 6375 ft sand. Houston Oil Co.'s Richardson Fee 1, 3 mi e Evadale, Benj. Richardson sur, dr 5415 ft sandy shale.

JEFFERSON COUNTY—Coast O.&G. Co.'s J. O. B. Young 1, 3 mi ne Pt. Arthur, Jos. Grigsby sur, dr 3400 ft shale. Jack Schultz's O. M. Todd 2, Cheek prospect, W. Carr sur, dr 6480 ft.

LIBERTY COUNTY—Leon Brisley Tr., J. M. Neal 1, 3 mi s Davis Hill, E. Tanner sur, dr 2690 ft water sand.

MATAGORDA COUNTY — Cockburn Oil Corp.'s Hawkins 5, Sheppards Mott, moving in materials. United North & South Dev. Co.'s Stoddard 1, wo, Buckeye townsite, total depth 7926 ft, making 1500 bbls 25% salt water, preparing to work over. Humble O.&R. Co.'s Pierce Est. 1, ne corner of county, Isaac Foster sur, dr 2572 ft sticky shale. Rugeley et al's Cleveland 1, 1 mi w Bay City, E. Hall sur, dr 1500 ft.

MONTGOMERY COUNTY—C. J. Daniel's Flowers 1, W. Barker sur, spudded. A. H. Parsons' Drought 2, J. Kronkite sur, dr 1320 ft shale.

ORANGE COUNTY—Houston Oil Co.'s E. Hurst 1, E. Hurst sur No. 15, dr 3460 ft shale. E. L. Smith Oil Co.'s Miller Vidor 1, J. W. Swisher No. 3, sur, dr 4250 ft.

POLK COUNTY—Joseph L. Anderson's E. I. Duke 1, Ace dome area, Peter J. Menard sur, dr 2810 ft shale. Ace Oil Co.'s Martha E. Roberts 1, Ace dome area, Joaquin F. de Rumayor sur, dr 3856 ft shale. Kach & Stephenson's R. H. Root 1, Lawrence Castillian sur, dr 2500 ft shale. Dick Schwab's Davis-Holmes 1, 8 mi s Livingston, A. Viesca sur, dr 3598 ft shale.

SAN JACINTO COUNTY—Darby-Jones-McBee Dr. Co.'s J. R. Bennett 1, nw Cold Springs, dr 1200 ft sand rock. Weaver et al's Delta Land & Timber Co. 1, Jas. W. Robertson sur, ru.

TRINITY COUNTY—C. M. Beckner et al's J. B. Gibson 1, Wm. Beasley sur, dr 1032 ft sand.

TYLER COUNTY—Republic-Houston Oil's Sterne Fee 1, 4 mi se Spurger, Adolph Sterne sur, dr 4895 ft shale.

WALLER COUNTY—Birdwell et al's Robertson 1, Jno. Baker sur, ru. Jim Oil Co.'s Joe W. Harris 1, near Prairie View, Justo Liendo sur, fsh for dr stem at 4857 ft in sand.

WHARTON COUNTY — Cullen & West's Hawes 1, 1 mi ne Hungerford, dr 3010 ft shale; Hudgins 1, Alexander Jackson sur, dr 2890 ft shale. Gant & Teas' Laura Hahn 1, 14 mi n El Campo, N. Mancha sur, dr 5540 ft shale. Smith & McDaniel's and Shell's Mitchell 1, 2½ mi ne El Campo, H.&T.C. sur No. 8, showed gas and salt water on dr stem test at 5432-5488 ft.

Louisiana Gulf Coast Field Developments

Completions

Company, Well and Location	Initial Production Bbls.	Depth
BEAUREGARD PARISH—		
DeRidder Dev. Co., McMahon 1, 33-2s-9w	*	1265
EAST HACKBERRY—		
Calcasieu Oil Co.'s Watkins 38	950	2975
PORT BARRE—		
Gulf Ref. Co., Wilson-Cochran 2	1600	3470

Wildcat Drilling Report

(Wells shut down not included)

ACADIA PARISH—Olympic Oil Co.'s Luckett 1, Jennings, dr 1100 ft shale. Yount-Lee Oil Co.'s Houssiere-Latrielle 11, Jennings, dr 6580 ft shale.

CALCASIEU PARISH—Dr. T. W. Irvine's Mimms 1, Sec. 20-9s-7w, dr 1680 ft. The Texas Co.'s Miller 1, Edgerly, dr 6015 ft shale.

CAMERON PARISH—Union Sulphur Co.'s Pure 2, E. Hackberry, dr 6265 ft lime; Humble 4, dr 5540 ft shale. Yount-Lee Oil Co.'s School Land 11, Hackberry, dr 5700 ft.

IBERVILLE PARISH—Shell's Wilbert 6, White Castle, dr 5315 ft sand. Standard of La.'s Gay 3, Choctaw, moving in rig.

JEFF DAVIS PARISH — B. D. Fenley's Lognion 1, 22-10s-4w, dr 40 ft. Shell's Fontenot 2, Iowa, prep to dr plug, oil sand at 6931-6938 ft.

LA FOURCHE PARISH—Lechner & Hubbard's Lollain Lbr. Co. 1, 32-18s-22e, spud. The Texas Co.'s LLE-Leesville 6, Leesville, dk.

PLAQUEMINE PARISH—The Texas Co.'s State Garden Island Bay 6, Garden Island Bay dome, trying to kill gas flow, depth 815 ft.

TERREBONNE PARISH—The Texas Co.'s Caillou Island 7, Caillou dome, driving piling for foundation; LLE-Lake Barre 4, Lake Barre dome, dr 2372 ft cap rock; State Lake Barre 7, wo, dr 5665 ft sand; State Lake Barre 17, dr 5090 ft.

VERMILION PARISH—Pure Oil Co.'s Alliance Trust Co. 3, Gueydan, dr 3985 ft; Mulvey Irrig. Co. 2, Gueydan, dr 30 ft clay. Shell's Hebert 1, 10-15s-1e, ru.

VERNON PARISH—Minerals Division of Llano Co.'s del Rio 1, 2 mi sw Leesville, 34-2n-9w, dr 3300 ft shale.

LOUISIANA FIELDS

Converse Second Well Makes Less Oil When Deepened and Is Shut Down. DeSoto Parish Wildcats Widespread.

DeSoto Parish Getting Extensive Wildcat Play

Shreveport ,La.—J. A. Whitson's Sanders 1, SE SE Section 19-11-13, a wildcat in DeSoto Parish, showed enough gas in the Blossom at 1965 feet to blow out and then bridge during the last week. Elevation is 285 feet. This well topped marl at 1286 feet, logged chalk at 1355 feet and after setting eight-inch casing at 1346 feet to test a show of oil and gas at that horizon bailed dry.

De Soto Parish is getting a considerable wildcat play which is not confined to any particular part of the parish. Two new wildcat locations were announced last week, one being in the north "play" of the new Converse shallow field in Sabine Parish. This location is M. B. Gill's W. J. Hill 1, SW NE Section 4-10-13. W. M. Pollack who recently blocked 5000 acres in western De Soto Parish has derrick up on this block for L. H. Cook 1, NE NW Section 1-13-15.

A. W. Phillips, Trustee, representing California independents, announced his third wildcat location in as many parishes in North Louisiana during the last week. This test is Knighton 1, NE SE Section 31-20-7w, Claiborne Parish. The same operator has rigs up or is drilling wildcats in Bossier and Grant Parishes.

Shreveport, La.—K. C. Bundy has blocked 3000 acres of leases centering in Section 10-23-10e, Webster Parish, northeast of the town of Sarepta for a 3000 foot test to start by December 10 this year.

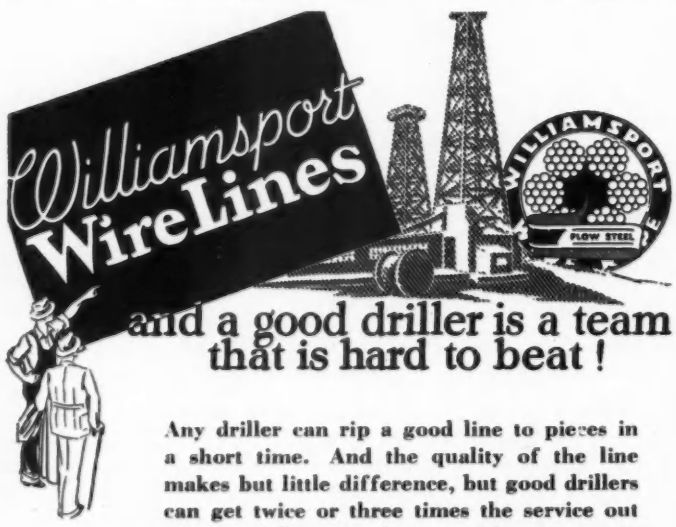
Bossier Parish Wildcat Swabbing 28 Gravity Oil

Shreveport, La.—Steckol and Breazeale's Nattin 1, SW NE Section 15-22-14, Bossier Parish,a wildcat, last week was swabbing some 28 gravity oil with a slight show of gas, around the 3000-foot level, the exact depth not being known. Six-inch casing was cemented at 2998 feet, after 25 feet of broken formation was encountered. The horizon is the same as the upper horizon at Cartersville, about 15 miles to the east of the wildcat. Owners estimate the well as good for 25 barrels daily on the pump. This well is about eight miles northeast of the shallow Hosston field in Caddo Parish which produces from 1500 feet.

A well drilled not far from the present test to 2890 feet last year showed oil but refused to pump. This well, Plain Dealing Oil & Gas Company's Nattin 1, Section 14-22-14, deepened last week to 2965 feet, bailed dry with a show of oil at that level.

Converse Well Makes Less Oil at Lower Level

Shreveport, La.—Gibson-Johnson and Higgins' Frost Lumber Company 2, NE NW NE Section 15-9-13, Sabine Parish, three miles northeast of the one and only completion in the Converse district, which was deepened from 1516 to 1526 feet a fortnight ago. Last week after bailing at the rate of 1½ barrels of oil per hour, for two days, was deepened to 1534 feet, where there was less oil show found and operators are now shut down at that level.



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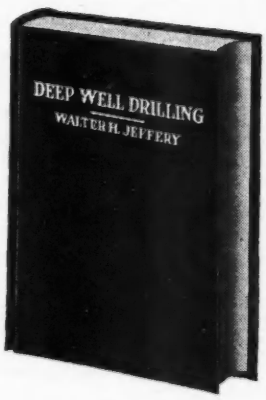

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Meanwhile Sandfield Oil Company's Bowman-Hicks 1, NE NE Section 26-9-13, which had logged the marl-chalk pay horizon at 1707 feet, drilled plug and took core to 1917 feet, the core showing no saturation but having a strong oil odor. Elevation is 302 feet. This well will go to 3100 feet if pay is not found in the marl-chalk horizon.

Three new locations were made in Converse for the last week, bringing the total of locations and drilling operations there to 19. The new tests are: Evans Brothers' Crawford 1, SE SE Section 20-9-13; Mrs. Gertrude Terry, Trustee, A. Burkett 1, NE NW Section 10-9-13; and Rockmill and associates' M. J. Castle 1, NE NE Section 35-9-14.

North Louisiana Field Developments

Completions

Company, Well and Location		Initial Production Bbls.	Depth
BOSSIER PARISH—			
Belmont Oil Co., Edwards 1, 12-18-12		*	1105
MOREHOUSE PARISH (Monroe)—			
United Gas Pub. Serv. Co., Sandidge 9, 27-20-4e		¶5½	2153
SABINE PARISH (Zwolle)—			
Askew & Ellis, McNeely E-3, 14-7-11		25	2567
R. L. Gay, Tr., Bowman-Hicks 12, 14-7-14		*	2791
P. J. White, Tr., Nulton 1, 1-7-13		*	2455
UNION PARISH (Monroe)—			
Southern Carbon Co., Fee 62, 30-20-4e		¶6	2146

New Operations

ASCENSION PARISH—Rio Bravo Oil Co., Houston, W. J. O'Neil, Community 2, 31-10s-2e, 1690 ft n and 2270 ft w from most southerly se cor.

CAMERON PARISH—Calcasieu Oil Co., Sulphur, Watkins 39, 13-12s-10w, 807 ft w and 1184 ft n se cor. Jim Oil Co., Lake Charles, M. P. Erwin 10, 13-12s-10w, 1520 ft n and 845 ft w se cor.

CLAIBORNE PARISH—A. W. Phillips, Tr., Shreveport, Knighton 1, 31-20n-7w, 330 ft e and 330 ft n sw cor. ne se.

DE SOTO PARISH—Bagett Oil Corp., Mansfield, Moore Place 1, 1-13n-15w, 330 ft w and so of ne cor. nw. M. P. Gill, Ruston, W. J. Hill 1, 4-10n-13w, 330 ft n and e from c.

OUACHITA PARISH—Amalgamated Oil Co., Monroe, Cole 4, 7-19n-4e, 3252 ft w and 3300 ft n se cor.

RAPIDES PARISH—Petroleum Industries, Inc., Shreveport, Lee Lbr. Co. 1, 13-5n-2e, 330 ft n w se cor nw¼ se.

SABINE PARISH—J. Ed. Bailey, Tr., Birmingham, Ala., Les Lites 1, 28-8n-11w, 330 ft s and w from ne cor, se sw. Evans Bros., Saline, Crawford 1, 20-9n-13w, 330 ft s and w from ne cor, se se. Picayune Oil Co., Inc., Shreveport, Bessie Porter 1, 30-8n-11w, 330 ft n and w se cor, nw sw. The Texas Co., Shreveport, Stille 5, 33-8n-11w, 1080 ft e and 330 ft n sw cor. Mrs. Getrude Terry, Tr., Shreveport, A. Burkett 1, 10-9n-13w, 330 ft n and 330 ft w se cor, n ne nw. Henry Rockmill, Ft. Worth, Texas, M. J. Castle, 35-9n-14w, 330 ft s and w ne cor, ne ne. I. N. Pharie, Tr., Shreveport, I. W. Curter 1, 13-7n-11w, 990 ft s and 330 ft e.

Wildcat Drilling Report

(Wells shut down not included)

BIENVILLE PARISH—Black Lake Dev. Co., Petty Stave Co. 1, nw nw 19-18-6w, arr res, td 2500 ft. Robt. S. Ross, Beck 1, ne ne 3-18-8w, move in rig.

BOSSIER PARISH—A. W. Phillips, Tr., Oden 1, nw nw 4-18-13, 10-inch 100 ft, sd 200 ft, dr water well. Plain Dealing O&G Co., Nattin 1, 14-22-14, bailed dry with small show oil, 2965 ft. Steckol & Breazeale, Nattin 1, sw ne 15-22-14, 6-inch 2998 ft, swabbing some 28 gravity oil with show gas. Steckol & Breazeale, Nattin 2, nw ne 22-22-14, dk. Texana Oil Co., Alford 1, 10-18-11 dr 1700 ft.

CADDO PARISH — Bolinger & Walker, Thompson 1, 16-22-14, dk. Caddo Prairie Dev. Co., Nicholson 1, ne sw 10-22-15, dr 2150 ft.

CLAIBORNE PARISH—A. W. Phillips, Tr., Knighton 1, ne se 31-20-7w, materials. Webster O&G Co., Smith 1, 8-21-7w, sd 1400 ft.

DE SOTO PARISH — DeSoto Dev. Co., Nickie 1, 7-13-12, rig. M. B. Gill, Hill 1, sw ne 4 10-13, lcn. Honeycutt O&G Co., Porter 1, 26-12-13, dr 2680 ft. Mrs. Aleene Ibach, Tr., Rambin Est. 1, nw ne 32-11-11, 10-inch 120 ft. E. T. Oakes, Johnson 1, 30-13-15, core 4375 ft. Geo. L. Pace, Jno. Cale 1, se ne 11-11-11, materials. W. M. Pollock, Cook 1, ne nw 1-13-15, dk. Potter et al, Dowling Bros. 1, 31-14-14, missed ds test, wo td 3068 ft. Walters & Nicholson, Jim Guy 1, 3-11-13, wosr, td 2767 ft. Warren & Craig, Wagner 1, 5-12-14, fsh 750 ft. Jack Whitson, Sanders 1, sw sw 19-11-13, elev 285 ft, blew out gas, bridged, sd wo, td 1965 ft.

GRANT PARISH — A. W. Phillips, Tr., Cameron 1, se ne 27-7n-3w, rig. Robichaux et al, Bradford 1, 16-9-1e, rig.

LINCOLN PARISH — Benedum & Trees, Dubach Lbr. Co., se ne 25-20-4e, elev 121 ft, arr res, td 3830 ft.

MOREHOUSE PARISH — Feazel & Kalil, Davenport 1, 28-21-6e, sd 2510 ft. H. W. Snowden, Meyers 1, ne ne 15-22-7e, 10-inch 40 ft.

NATCHITOCHES PARISH — Allender & Rasmussen Oil Co., Cane River Valley 1, se se 61-6n-5w, sd 100 ft. Gerson et al, Smith 4, 11-10-8w, sp. J. B. Oil Co., Hankins 1, 67-10-7w, dr 630 ft. Natchitoches Pet. Co., Edenborn 1, 4-11-6w, arr res, td 2220 ft. Saline Bayou Dev. Co., Bodcaw Lbr. Co. 1, 9-12-5w, sd 2680 ft. Texana Oil Co., Clarke-Morse 2, 23-5-6w, 6⅝ cas 3350 ft, sd wo 3475 ft.

RAPIDES PARISH—Petroleum Industries, Inc., Lee Lbr. Co. 1, sw nw se 13-5n-2e, dk.

SABINE PARISH—Alford & Cleary Bros., Jackson 1, se nw 10-9-13, lcn. Alford & Cleary Bros., Patrick 1, sw ne 11-9-13, lcn. Alford & Cleary Bros., Patrick 2, sw ne 11-9-13, lcn. Barbare et al, Ryals 1, nw nw 27-9-13, dr 1200 ft. C. M. F. Oil Co., Aaron & Musser 1, nw nw 32-9-13, rig. R. L. Gay, Tr., Long-Bell A-1, nw nw 10-8-13, sd 6875 ft. R. T. Henderson, Sistrunk 1, se nw 9-9-12, sp 10-inch 88 ft. Gibson-Johnson & Higgins, Frost Lbr. Co. 2, 15-9-13, sd after bailing one and half barrels hour for several days, td 1534 ft. Lee & Burnett, Burkett 1, nw nw 10-9-13, elev 2-4 ft, base Midway 1472 ft, sd 1600 ft. LeGrand & Jackson, McGough 1, 2-8-10, arr res, td 2200 ft. H. C. Lessenger, Bowman-Hicks 1, nw sw 13-9-13, lcn. C. D. Loe, Tr., Whitney Corp. 1, nw ne 12-9-14, arr core 1375 ft. Loring Oil Co., Bowman-Hicks 21, 16-7-12, elev 247 ft, dr 4975 ft. Ben Merritt, Lucius 1, sw ne 4-5n-12w, dk. M. W. Ransom, Simpson 1, 30-7-10, dk. Rockmill et al, Bowman-Hicks 1, ne nw 36-9-14, move in rig. Rockmill et al, A. Patrick 1, ne sw 21-9-13, dk. Sabine Prod. Co., Whitney Corp. 1, sw sw 4-9-13, setting cas 1473 ft. Sandfield Oil Co., Bowman-Hicks 1, ne ne 26-9-13, elev 302 ft, dr plug in 8¾ cas set at 1707 ft, cored to 1725 ft, arr core again. Service Drilling & Roy Corp., Whitney Corp. 1, se se 32-10-13, rig. E. M. Self, G. I. Paul 1, ne sw 9-9-13, dk. Simmons et al, Fleming 1, se se 11-8-13, rig. C. W. Smith et al, Pattison 1, 30-10-11, sp sd 780 ft. W. M. Ungerman, Cross 1, sw se 25-8-11, sp 10-inch 50 ft. Ben Youngblood et al, A. J. Burkett 1, ne nw 10-9-13, dk.

UNION PARISH—E. S. Goens, Frost Lbr. Co. 1, 17-22-2e, rig. Wing Hong, Tr., Union Sawmill 1, se se 15-22-1e, 10-inch 70 ft. Wingfield et al, Union Sawmill 1, sw sw 27-23-1e, 10-inch 150 ft, sd 185 ft.

WEBSTER PARISH—Silvey et al, Drake 1, 14-19-10, rig.

WEST CARROLL PARISH—Mamie S. McCurry et al, Richardson & Donnan 1, 13-19n-9e, rig.

WINN PARISH—P. V. T. Oil Co., Southern Advance Paper Co. 1, nw sw 28-13-5w, sr 1050 ft.

VERNON PARISH—Llano Coop. Colony Fee 1, 34-2n-9w, elev 235 ft, top Jackson 2055 ft, top Cockfield 3150 ft, cored sand no show 3333-44 ft, wo.

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ARKANSAS FIELDS

LaFayette County Wildcat Reports Coring Cap Rock

Texarkana, Arkansas.—Fox & Langford's Coleman Brothers 1, SE SE Section 25-16-25, LaFayette County, southwest Arkansas, logged red beds last week at 3089 feet and later was coring a cap rock at 3169 feet; elevation is 225 feet.

Interest in the Miller County oil flurry is centered in C. V. Lenz's Arthur Dean 1, NW SE Section 19-15-25, which is drilling and coring around 2900 feet.

W. S. King and associates' E. L. Beck 1, NE NW Section 35-15-26, Miller County, was abandoned as a dry at 3218 feet.

Arkansas Field Developments

Completions

Company, Well and Location		Initial Production Bbls.	Depth
MILLER COUNTY—			
W. S. King et al, E. L. Beck 1, 35-15-26		*	3218

New Operations

LITTLE RIVER COUNTY—M. E. Sanderson, A. E. Hale 1, 120 ft n 120 ft e, swc se se 22-12-29.

Wildcat Drilling Report

(Wells shut down not included)

CLEBURNE COUNTY—Fred S. Craver, Donithan Lbr. Co. 1, sw sw 34-11-9, dr 3100 ft.

COLUMBIA COUNTY—Kendall Oil Co., Fullenwider & Kitchen 1, ne ne 13-17-22, sr 2500 rt.

DREW COUNTY—Cooperative Dev. Co., Ogles 1, 35-13-5, arr res, td 3370 ft.

LAFAYETTE COUNTY—Fox & Langford, Coleman Bros. 1, se se 25-16-25, elev 225 ft, top red beds 3089 ft, core cap rock 3169 ft. Chas. McDonald, Allen 1, 11-19-26, sd 2645 ft. Sam Wilson, Jr., Smith 1, nw se 24-19-23, rig.

LITTLE RIVER COUNTY—American Portland Cement Co., Fee 1, sw ne 21-12s-32w, dr 615 ft. M. E. Sanderson, Hale 1, se se 22-12s-29w, dr 1420 ft.

MILLER COUNTY—Roy Baker et al, E.

L. Beck 1, sw se 33-15-26, rig. Dennis & Cubbage, Head 1, sw sw 20-15-26, core 2826 ft. Duluth-Ark. Oil Co., Beck 1, nw sw 34-15-26, dr 2485 ft. Fitzwater et al, C. J. Norsen 1, se sw 20-15-27, sd 1945 ft. Lens et al, Arthur Dean 1, nw se 19-15-25, dr 2900 ft. Pedersen et al, Fouke 1, ne ne 11-17-27, 10-in 105 ft. Jno. C. Rogers, Price 1, 17-16-25, rig. Bob Simmons, Lamb 1, 14-16-27, dk. Sorrells & Tidwell, McCowan 1, nw se 22-15-28, sd 400 ft.

ST. FRANCIS COUNTY—Kentucky-Ark. Oil Co., Inc., Britton 1, ne nw 1-4n-1e, dr 3775 ft.

UNION COUNTY—Mamie S. McCurry et al, Rowland 1, sw sw 9-19-11, rig. Graves et al, Patterson 1, ne ne 31-19-16, dk.

WOODRUFF COUNTY—B. F. Thompson, Rosser 1, se se 7-5n-2w, dr 605 ft.

YELL COUNTY—Rainbow O&G Co., Berry 1, ne ne 16-5n-24w, dk.

Southeastern States

Gulf Contracts Mississippi Tract After Exploring

Jackson, Miss.—Gulf Refining Company is reported to have closed a contract with Batson Lumber Company to make geological and geophysical investigations on 90,000 acres of the latter's land located in Perry, Forrest, Lamar, Marion and Pearl River counties, in south central Mississippi. The contract, it is reported, carries the proviso that such land as desired may be leased by the oil company.

The head of the land company personally is furnishing 7900 acres of the block, it being located in Pearl River County, in townships 1 south, range 15 west, and township 2 south, ranges 14 and 15 west.

Southeastern States Field Developments

Wildcat Drilling Report

(Wells shut down not included)

MISSISSIPPI

HINDS COUNTY—Love & Lancaster, Elton Plantation 1, 17-4n-1e, elev 260 ft, top chalk 4062 ft, dr 4220 ft.

JACKSON COUNTY—Gulf Ref. Co., Dantzler Lbr. Co. 1, se ne 27-4s-8w, materials.

JASPER COUNTY—L. Spragen et al, Bank of Philadelphia 1, se se 35-3n-12e, elev 600 ft, fsh, td 1800 ft.

LAMAR COUNTY (Purvis) — Stauffer & Kouri, Trs., Bond 1, sw ne 18-2n-14w, elev 364 ft, ds recovered, missed ds test due faulty seat, arr try again, td 3026 ft. Dr. Chas. Gorr et al, Jordan 1, nw sw 1-2n-15w, dk.

MONROE COUNTY—P. J. McAlpine et al, Chas. Rye 1, se nw 22-15s-16w, dr 1850 ft.

WILKINSON COUNTY—Foster Creek Oil Corp., Foster Creek Lbr. Co. 1, nw nw 12-2n-2w, lcn.

ALABAMA

LAMAR COUNTY (Vernon) — P. J. McAlpine et al, Gardner 1, nw nw 22-15s-17w, arr deepen, td 3350 ft.

MARENGO COUNTY—Jos. Bruner et al, Nolan's Store 1, 23-14n-1e, lcn; Fee 1, 36-14n-2e, lcn.

MOBILE COUNTY—J. C. Prine et al, M. & O. Ry. 1, se ne sw 33-2n-4w, fsh ds, td 3775 ft, shale.

NEW MEXICO . . . ROCKY MOUNTAIN

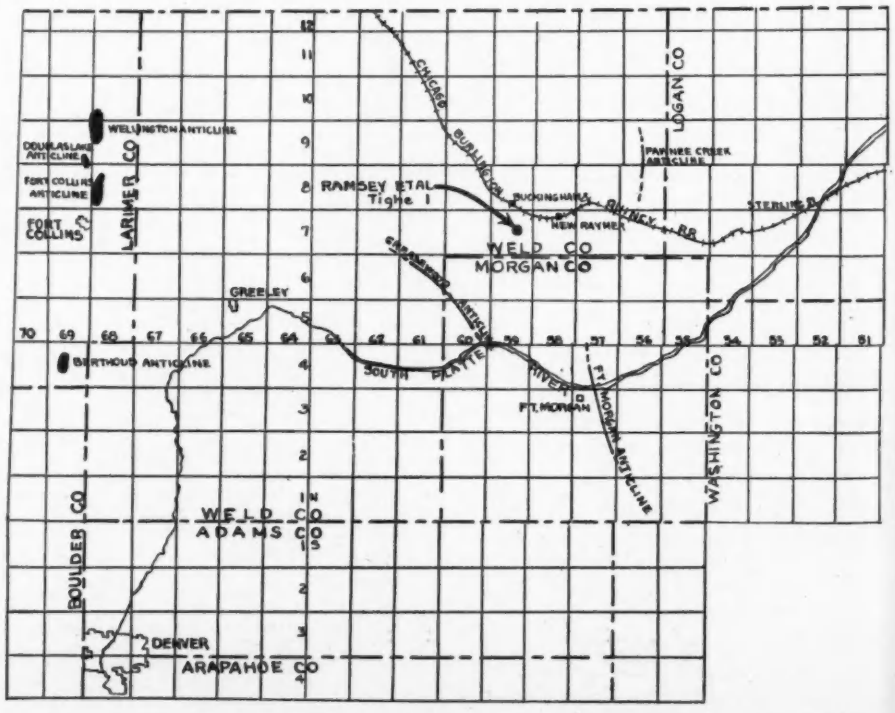
Big Producers Show Hobbs Open for Important Extension. Mountain Area Unusually Active for Season.

Location of Colorado Well Makes Oil Show Important

Denver, Colo.—Excellent indications for good production are reported from the Ramsey Petroleum Corporation's test in the New Raymer-Buckingham territory in northeastern Colorado. The well made a head of oil and shot drilling fluid 50 feet up into the derrick on November 21 after the control valve had been shut for about 10 minutes. Bailer had been bringing up green crude oil and hole stood within 250 feet of the top full of fluid. The well is bottomed in the Dakota sand around 6760 feet. The new well is 13 miles northeast of the Greasewood Flats field. It is known as Tighe 1, SW NE SE Section 15-7n-59, Weld County.

Tulsa.—Regardless of varying estimates on initial production, Ramsey Petroleum Corporation et al's Tighe 1, SW NE SE Section 15-7n-59w, Weld County, Colorado, seems to be an important find in that it is 13 miles from the nearest production and is producing from a member of the Dakota sand which has yielded only water in many of the tests which have penetrated it.

The new well is 13 miles northeast of Greasewood Dome, the nearest production, and approximately 75 miles northeast of Denver, in the northeastern portion of the state. According to Clyde Wagner, who worked the structure for Ramsey Petroleum Corporation geologic work was done in the spring and summer of 1931, detailing on concreitionary beds in the Fox Hills formation and checking through paleontological study. A structure, trending northwest-southeast and covering many square miles was mapped, and in August, 1931, Ramsey Petroleum Corporation commenced assembling the block which now includes approximately 8880 acres. Most of the leases are for 10-year periods. Manning and Terry, contractors of Tulsa, who are drilling the well, own 1/16 interest; W. L. Kistler, Tulsa, 3/16 interest, and Greeley Oil Company, 1/32 interest, leaving Ramsey Petroleum Corporation, approximately



Showing location of Ramsey et al's wildcat well in Weld County, Colorado

Geological Formations in Northeastern Colorado*

Age	Type or Formation		Thickness Ft.
Quaternary:	Gravels, sand and alluvium		0-100
Tertiary:	Gravels, sand, and clay		10-300
Cretaceous:			
	Laramie formation		200-800
	Fox Hills formation		400-2000
	Pierre shale		4500-10,000
	Niobrara formation		330-410
	Benton shale		590-640
	Dakota formation—		
	Muddy sand	0-80	
	Dark shale	110-240	
	Sandstone	10-15	315-425
	Sandy shale	25-65	
	Sandstone	35-75	

*After U. S. G. S. Bulletin 796, pp. 76 and 77.

72 per cent with control and operation of the block.

The test was spudded September 8, 1932, after operators had experienced considerable difficulty in locating water for the rotary equipment. Setting surface pipe, operators drilled to 6700 feet, in the Muddy sand, without additional casing. Acid bottle determinations show the well to be straight, a remarkable drilling record considering the elapsed time of less than 60 drilling days.

According to Wagner's correlations the test has run structurally high from the first markers to top of the Dakota sand. Hygene sand was reported 200 feet higher than in wells in the Greasewood field and top of the Dakota sand approximately 225 feet high compared with wells in the same pool. Top of the Muddy sand was encountered at 6685 feet and top of the Dakota sand at 6757 feet. After coring Muddy sand and recovering a six-foot core of saturated sand, operators cemented casing just above the sand. The well was then bailed down to about 3500 feet below the surface where gas blew the bailer into the derrick and cleaned the hole of the remaining fluid. The Muddy sand yielded approximately 6,500,000 cubic feet of wet gas estimated to be making 75 to 100 barrels of high gravity oil. After blowing for three or four days the well was shut in, the gas killed, and drilling continued to Dakota sand. A three-foot core resulted in no recovery but in the second attempt operators recovered two feet of saturated Dakota, making total depth about 6762 feet. Base of the Muddy was at about 6700 feet.

The well is located in the western portion of the Julesberg Basin which covers southwestern South Dakota, Western Nebraska, Eastern Wyoming, Northwestern Kansas, and approximately the eastern half of Colorado. The 105th meridian marks the approximate western limits of the basin. A large portion of the basin is covered with beds of the White River of Oligocene age, deposited unconformably upon the underlying Laramie formation of Cretaceous age. The northern and southeastern portions of Weld County are covered with relatively flat-lying beds of White River formation with outcrops of Laramie, Fox Hills, and Pierre shale occuring in the stream beds. Surface beds are not distinctive and correlation is hazardous. Dips measured at a few points by the United States Geological Survey show the surface beds to be dipping north and northeast from Morgan County into Weld County. Maximum dip appears to be about six degrees, with the average probably not over two degrees. Geological formations in northeastern Colorado are as shown in an accompanying tabulation.

Three Dry Creek Wells Near Completion

Red Lodge, Mont.—Three wells are near completion in the Dry Creek field in southern Carbon County, Montana. Corbon Oil & Gas Company's McMinn 1, NW Section 7-7s-21e, a diagonal offset to the well recently completed by Ohio Oil Company in the eastern extension to the field, is standing with the nine-inch casing set on top of the Dakota sand. A core taken to 5527 feet showed heavy saturation of both oil and gas, and it is expected that the well will be a good producer. The stockholders in this company are Cheyenne, Wyoming, and Denver, Colorado, business men headed by Harry P. Hynds of Cheyenne.

Ohio Oil Company's Bowman 11, Section 7-7s-21e, in the northwest extension of the field, is still fighting for a water shutoff in the bottom of the Lakota sand. The well continues to make both oil and gas from both the Dakota and the Lakota, producing some 300 barrels per day along with water. The same condition exists at the Robinson 7, SE Section 3-7s-21e, which has changed from rotary to cable tools and is plugging off water from the Lakota. It is showing for oil production from both sands and it is hoped that both may be made to produce.

Ohio Oil Company's Margaret Souders 9, the last well on the company's program for this year, Section 2-7s-21e, is rigging up with rotary and should be under way before the end of the week.

Cut Bank Extension Test On Blackfeet Reservation

Cut Bank, Mont.—A new and interesting wildcat location was announced last week by W. M. Fulton for a test to be drilled on the Blackfeet Indian reservation, a mile and a half south and a half mile west of Roy Tarrant's Reickhoff 1, in the Cut Bank field, first producing test ever drilled on the reservation. Location is two miles west and a little north of the Tarrant interests' Haglund 1 which was the discovery oil well of the new Cut Bank territory. It is believed that the Fulton well will tap the sand at 50 to 75 feet lower on structure than producers to the east. Location is on NE Section 16-34n-6w.

Big Muddy Well Swabbing 75 Barrels from Lakota

Casper, Wyo.—Ohio Oil Company reports that its Lakota sand well in the Big Muddy field east of here, Kinney 25 on SE Section 4-33-76, is swabbing 75 barrels per day on a test with cable tools. Hole is bottomed at 4326 feet. Kinney 26, which will make a small well from a sand around 1500 feet, was drilled deeper to 2200 feet, but no increased showing of value was encountered, so the test will be completed in the shallow sand as was the original plan. Continental Oil Company is held up on Glenrock Sheep Company 30, SE Section 4-33n-78w, by a fishing job with the hole bottomed at 4713 feet. It is believed that the hole is now near the top of the Sundance formation. This is the first test in Big Muddy field drilled to this sand.

Wells Prove Hobbs Northwest End Open for Extension

Hobbs, New Mexico.—Completion of two unusually large oil and gas producers on the northwest end of the Hobbs field last week offers conclusive proof that the trend of production in that direction is wide open for important extensions. The two latest wells are offsets, and give the end of the producing area a width of 1¼ miles in an east and west direction.

These completions rank among the

largest in the field on potential flow. Gypsy Oil Company's D. W. Hardin 1, located in the southwest corner of east half of Section 18-18s-38e, gauged 19,599 barrels of oil and 13,000,000 cubic feet of gas daily on open flow from lime at 4103-4221 feet, with three-inch tubing set eight feet off bottom. Amerada Petroleum Corporation's Boon Hardin 2, a west offset, flowed through open casing and tubing at the rate of 15,034 barrels oil and 12,400,000 cubic feet of gas daily from lime at 4088-4152 feet.

Gypsy Oil Company's Hardin 1 is exactly one mile south of a 4520-foot dry hole drilled in 1930 by Landreth Production Corporation and Maljamar Oil & Gas Corporation. However, the trend of production is expected to take a course to the sothwest of this failure.

Three Completions at Cut Bank; Two New Starts

Cut Bank, Mont.—Last week saw three wells swabbing to test before being put on the pump and two new operations getting under way in the Cut Bank field in northern Montana. One of Roy Tarrant's first completions, Reickhoff 1, was swabbing around 90 barrels per day although the casing was still off bottom. An offset to this well is one of the new operations,—Dakota-Montana Oil Company's test on the Drumheller land, SW SE NE Section 3-34-8w. The other new test will be drilled by the Alberta-Pacific Consolidated Oil Company and is to be known as Matson 1.

Montana Power Company reports that Simereo 1, N½ Section 5-33-5w, 1½ miles northwest of the town of Cut Bank in what was previously considered rank wildcat territory and which proved a five- to eight-mile extension to the producing field, swabbed 65 barrels of oil, and then 106 barrels, and finally was plugged back to 2765 feet. The sand was found at 2749-54 feet and the well was drilled to 2792 feet.

Santa Rita Oil Company's Yunck 1, NE NW NE Section 23-34-6w, swabbed an initial 145 barrels per day from 2875-2905 feet with hole bottomed at 2910 feet. This well proves a southwestern etxension to the proved area and is one of the best producers to be completed in the new oil territory. Roy Tarrant's Yunck 1, NW NW Section 12-34-6w swabbed 100 barrels per day, initial, from 2835 feet.

In the gas territory The Texas Company's Edris Fisher 1, S½ Section 19-35n-5w, found a flow of about four million cubic feet of gas in a sand topped at 2546 feet. Upon deeper drilling this flow became ignited and burned the derrick. Hole is bottomed at 2750 feet and repairs are now being made.

The Texas Company placed on record a considerable block of acreage south of the town of Cut Bank and about eight miles south of Montana Power Company's Simereo 1, including parcels on the Julius Bennett and the Lyal W. Lindquist farms, in range 32 north and township 5 west. It is presumed that the company plans an active exploration campaign in this area.

In addition to the six wells reported above, there are at present nine active tests under way in the field.

Rocky Mountain Field Developments

WYOMING

Completions

Company, Well and Location	Initial Production Bbls.	Depth
WESTON COUNTY (Osage Field)—		
Tug Oil Co., 2, ne nw sw 15-46-64 ...	2100	
NATRONA COUNTY (Midway Dome)—		
Mutual Oil Synd., Midway 2, sw se 14-36-79 show	200	6076

Wildcat Drilling Report

(Wells shut down not included)

CROOK COUNTY—St. Onge O&G Co., ne se 20-53n-61w, dr 770 ft. McWethy et al, 1-49n-67, dr 600 ft. Holden & Lawrence Refining Co., nw sw 25-39-67, mvg in.

FREMONT COUNTY—Ward O&G Co., 28-34-90, fsh bit at 2100 ft, td 4050 ft.

LINCOLN COUNTY—H. C. Harris et al, se 14-21n-117e, stand in gray lime 1507 ft.

NATRONA COUNTY—Mutual Oil Synd., Midway 2, sw se 14-36-79, pump to test 6076 ft. Summit Oil Co., Trevett 1, 21-33-80, dr hard formation 1705 ft.

PLATTE COUNTY—T. B. Oberman, nw se 30-21-68, dr in lime 150 ft.

WASHAKIE COUNTY — Bales Oil Trust, Brome 1, ne nw 13-48n-90w, prep to pump 1430 ft.

WESTON COUNTY—Julius Peters et al, Weitzell 1, nw 30-46-64, co to test 4590 ft. Gose Syndicate, ne 28-37n-63w, ur 6-inch, td 5050 ft.

COLORADO

New Operations

JACKSON COUNTY (So. McCallum Dome) —Denver Syndicate, 33-9n-78.

Wildcat Drilling Report

(Wells shut down not included)

ADAMS COUNTY—Hills Dome Lease Dev. Co., se 27-3s-68w, stand 4119 ft.

DELTA COUNTY—Black Canyon O&G Co., Lot 12, 5-15s-94, install larger rig 330 ft.

ELBERT COUNTY—J. M. Botts, se 7-8n-58w, dr below 4250 ft.

EL PASO COUNTY—Gulf States Oil Corp., Carson 2, ne 10-16s-66w, dr out plug 2000 ft.

LA PLATA COUNTY—McGarr Pete Co.'s Pinon Mesa 1, ne 34-33n-12, rig up. J. W. Irwin & Co., Doescher 1, nw 29-33-13, dr out plug, small show, to dd 3171 ft.

LAS ANIMAS COUNTY — P. W. Harr, Schneider 1, sw se se 10-33s-63w, completed contract, to dd 2010 ft

LINCOLN COUNTY — Eastern Colo. Oil Corp., State 1, nw 36-14s-57w, hfw from Dakota 3464 ft.

MOFFAT COUNTY—W. A. Myers et al, sw sw 16-4n-101w, sd for winter, td (corrected 3250 ft.

MONTROSE COUNTY—Uncompahgre O. & G. Co., Vandemark 2, 27-50n-10, resume 800 ft.

ROUTT COUNTY—Mid-Colorado Pete Co., Omholt 1, se 29-4n-87, cem cave, est 2M gas at 1917 ft.

WASHINGTON COUNTY — Akron O&G Co., Gilcrist 1, 22-3n-53, bldg derrick.

WELD COUNTY—Reiter-Foster Oil Corp., Wilson 1, ne se 24-6n-61w, dr 500 ft. Ohio Oil Co., Butters 1, 7-6n-60w, swabbing from muddy 6690 ft. Ramsey Petroleum Corp., Tighe 1, sw ne se 15-7n-59w, 6 1-3M gas show, sd to install connections 757.

LARIMER COUNTY—C. Leonard Smith, U. P. 1, se sw 31-12n-69, fsh tools 172 ft.

MONTANA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
GLACIER COUNTY (Cut Bank Field)—		
Tarrant et al, Reickhoff 1, ne 3-34-6w	90	2962
Montana Power Co., Simereo 1, n½ 5-33-5w	106	2765
Santa Rita Oil Co., Yunck 1, nw 12-34-6w	100	2835

New Operations

GLACIER COUNTY (Cut Bank District)—W. M. Fulton, ne 16-34n-6w.

Wildcat Drilling Report

(Wells shut down not included)

CARBON COUNTY—Corbett Royalty Co., sw se 1-6s-23e, dr 1225 ft. Jack Creek O&G Co., 2, se 15-7n-23e, dr 1235 ft.

FERGUS COUNTY—Melton Corporation, 1, sw 24-21n-17e, ur 6¼-inch for wso, to dd from 3305 ft.

GALLATIN COUNTY — Montana Gas & Pete Corp., Adams 1, 35-1n-2e, dr 1700 ft.

GOLDEN VALLEY COUNTY — Golden Valley Oil Co., 2-6n-22, rig burned, td 3400 ft.

LIBERTY COUNTY—Peoples O&G Co., nw 17-35-6e, dr (corrected) 2665 ft.

TOOLE COUNTY—Liquid Gold Oil Co., 1, 25-36-1e, set cas at 2644 ft, dr 75 ft.

VALLEY COUNTY—Opheim O&G Co., ne 28-37n-38e, sd temp 1000 ft.

YELLOWSTONE COUNTY—Peter Antonioli, ne ne 2-2n-25e, casing on hand, ready to run 2370 ft. Rice-Fulton et al, 20-2n-23e, dr 150 ft.

NEW MEXICO

Completions

HOBBS FIELD—		
Amerada Pet. Corp., Boon Hardin 2	¶12-15000	4152
Gypsy Oil Co., Boon Hardin 1	¶13-19,600	4221

New Operations

LEA COUNTY (Hobbs field)—Stanolind O. & G. Co., State 11, se 4-19-38. Stanolind O. & G. Co., Thorp 26, nw 10-19-38. Continental Oil Co., 7 State A-33, 33-18s-38e. Continental Oil Co., 1 M. F. Sholes, B-13, sw nw 13-25s-36e. Shell Petroleum Co., McKinley 3A, se 19-18s-38e. Humble O&R Co., B. Bovers 2, se 20-18s-38e.

Wildcat Drilling Report

(Wells shut down not included)

BERNALILLO COUNTY—Norris Realty, Pajarito Grant 1, 22-9n-1e, standardizing 3359 ft. Norrins Realty, Galegas Grant 1, 19-11n-4e, dr 100 ft.

CHAVES COUNTY—R. D. Compton, sw se 20-10s-24, dr 75 ft. Warman Oil Trust, Weldon & Hoar, se 9-14s-25e, sd for casing 193 ft.

DE BACA COUNTY—Landowners Oil Co., State 1, ne 16-1s-27e, sd for pipe 5222 ft.

DONA ANA COUNTY—Middle States O&G Co., Boretzi 1, 14-36-5e, rig up. Viking O&G Co., sw nw 26-35-5e, dr bel 250 ft.

GUADALUPE COUNTY—N. M. Prod. & Ref. Co., McMillan 1, 24-5n-16e, wait for orders 4507 ft. N. M. Explor. Co., Ltd., Anton Chico Grant 1, sw 20-9n-17, dr 690 ft.

RIO ARRIBA COUNTY — Pan States Oil Co., 26-3s-1e, rigging up.

ROOSEVELT COUNTY — Peterson et al, Good 1, se nw 32-5s-30e, rig up.

SAN MIGUEL COUNTY—Cabra Springs

O&G Co., Thompson 2, ne 22-12-22, temp sd for water, 410 ft.

SANTA FE COUNTY—Kelsey Clients Dev. Est. 1, 26-10n-10e, work with 8¾-inch at 861 ft.

VALENCIA COUNTY — Homer G. Mills, Inc., Tome 1, nw sw 29-6n-3e, sd 500 ft. Western Nat'l Resources Corp., Inc., San Clemente Grant 2, ne 5-6n-1e, fsh 2115 ft. Gravity Petroleum Co., Clara R. Reed 1, 30-11n-9w, cellar completed.

MICHIGAN FIELDS

Approach of Winter Not Delaying New Field Work

Mt. Pleasant, Mich.—Arrival of winter in Michigan has effected little if any the oil and gas exploration in the state. Fifteen new locations have been made during the present month and 43 tests in proven and wildcat territories of the state are active. In the past development in Michigan has slowed to a few wells during the winter months.

In the face of winter, Shell Petroleum Corporation has launched its first drilling campaign in the state, having staked three tests in wildcat districts of Central Michigan.

Considerable exploration work is also forseen if any of the several proposed natural gas pipe lines are built from the Central Michigan field. Applications for permits to build lines are now being studied by the State Utilities Commission and a decision is anticipated by the end of the month.

Four good oil wells were completed in the Dundee limestone in the Central Michigan field during the week. Pure Oil Company's Mullet 6, Midland County, Greendale township, Section 15, made 410 barrels the first 24 hours for the best of the completions.

The other three wells completed are located in the East border area of the main pool. Braden-Sander's Stapelton 2, Midland County, Greendale township, Section 13, was good for only 15 barrels when drilled in but was treated with acid the following day and boosted to 100 barrels. W. L. McClanahan, Inc.'s, Root 2, Midland County, Greendale township, Section 12, was good for 275 barrels on initial and R. D. Malcolm's Hastings 2, Midland County, Greendale township, Section 13, was completed for 300 barrels a day.

Michigan Receiving Funds From Oil Development

Mt. Pleasant, Mich.—An income of approximately $23,000 a year is now being received by the state of Michigan through the rental of state owned lands leased for oil and gas development, according to the land division of the state conservation department.

Since 1931 oil and gas leases on 13,465 acres of state owned lands in Clare, Gladwin, Midland, Isabella and Ogemaw counties have been sold at auction for a total bonus price of $13,050.

There are now 18 producing wells on state leases.

Michigan owned lands are sold at public auction to the highest bidder and provide for an eighth royalty in so called wildcat territory and a sliding scale of from an eighth to a quarter royalty in proven territory together with an annual rental of 50 cents per acre.

Michigan Production Runs Way Above Last Year

Mt. Pleasant, Mich.—Total oil production in Michigan for the first nine months of 1932 has been in excess of 5,000,000 barrels, which is higher than for any previous entire year in the history of the state's petroleum industry, according to the geological division of the Michigan conservation department.

A new high monthly production was established in September when production in Michigan reached 759,887 barrels.

Chemical Company Forms Company to Treat Wells

Mt. Pleasant, Mich.—Dow Chemical Company of Midland, Mich., has set up a new corporation under the name of Dowell Incorporated which will manufacture, sell, purchase and deal in acids and equipments for treating wells. The new firm has been approved with an authorized capital stock issue of $100,000. Willard H. Dow of Midland heads the company.

The new company is chiefly an organization to handle the rapidly expanding business of treating oil wells with a special acid limestone solvent. Carried on extensively in the Michigan fields with success the treatment is now being experimented with in other oil states.

Michigan Field Developments

Completions

Company, Well and Location	Initial Production Bbls.	Depth
MIDLAND COUNTY—		
Pure Oil Co., Mullet 6, Greendale Twp, ne sw ne Sec.15	410	3568
Braden-Sanders, Stapelton 2, Greendale Twp, sw nw ne Sec. 13	100	3547
W. L. McClanahan, Inc., Root 2, Greendale Twp, ne ne sw Sec. 12	275	3543
R. D. Malcolm, Hastings 2, Greendale Twp, ne sw Sec. 13	300	3557

New Operations

MIDLAND COUNTY—Gordon Oil Co., Skinner 6, Greendale Twp, Sec 16, sw sw nw. Thompson Brothers, Rhemenschnider A-2, Greendale Twp, Sec. 14, ne sw ne. Talbot Oil Co., Tope-Talbot 1, Greendale Twp, Sec. 11, se se sw. Talbot Oil Co., State B-3, Greendale Twp, Sec. 11, se sw se.

ISABELLA COUNTY—W. J. Soverign, Pere Marquette 2, Broomfield Twp, Sec. 9, nw nw ne.

MUSKEGON COUNTY—Reed Oil Co., Plunkett 4, Muskegon Twp, Sec. 15, ne nw sw.

Wildcat Drilling Report

(Wells shut down not included)

MIDLAND COUNTY—Pure Oil Co., Yost et al's 1, Greendale Twp, Sec. 35, dr 2700 ft. Pacific Oil & Gas Co.'s Hoyt 1, Jasper Twp, Sec. 24, dr 3530 ft.

CLARE COUNTY—Theodore Oil Co.'s Thompson Bros. 1, Greenwood Twp, Sec. 35, dr 3750 ft.

GRATIOT COUNTY—J. G. Tiplady's Laycock 1, Arcada Twp, Sec. 11, sr, 1000 ft. Shell Petroleum Co.'s Covell 1, Seville Twp, Sec. 15, sp. Shell Petroleum Co.'s Mellinger 1, North Star Twp, Sec. 9, sp.

MUSKEGON COUNTY—H. and W. Feicke's Feicke 2, Fruitland Twp, Sec. 1, rigging up.

SAGINAW COUNTY—Webber's Kirchner 1, Tittatabwse Twp, Sec. 15, sd 4300 ft, preparing to run acid.

NEWAGO COUNTY — Hesperia Petrolem Co.'s Jones 1, 14n-14w, Sec. 20, dr 2650 ft. Newago Oil and Gas Co.'s Bates 1, 13n-13w, Sec. 12, co, 5900 ft.

MACOMB COUNTY—H. H. Brown's Bower 1, Chesterfield Twp, Sec. 29, dr 500 ft.

OCEANA COUNTY—A. S. Cochran's Hannum 1, Elbridge Twp, Sec. 31, co 2100 ft. L. E. DuVall's Wallace 1, Elbridge Twp, Sec. 34, dr 500 ft.

CASS COUNTY—Robert Anderson's Conkright 1, North Porter Twp, Sec. 29, dr 100 ft.

ST. CLAIR COUNTY—Snabely & Craft's Norman 1, Grant Twp, Sec. 22, sp.

WEXFORD COUNTY—Oil Properties Corp.'s McNitt Estate 1, Haring Twp, Sec. 10, sp.

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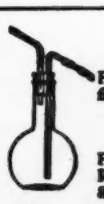

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EASTERN STATES

Field Developments

PENNSYLVANIA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
BRADFORD FIELD—		
South Penn Oil Co., Farm 4202 tract 8	3	....
Sloan-Zook Oil Co., Hazlewood 3	2	....
Benson & Benson, Bovaird 5	4	....
Mix Creek Oil Co., Fee 64	3	....
J. A. Madden, Franchot 5	2	....
C. A. McFadden, McFadden 13	10	....
T. P. Thompson, Jr., Borden 26	4	....
E. D. Kepner & Co., Kepner 19	3	....
F. & M. Roat, Roat 8	3	....
Heley Pet. Corp., Quintruple 19	3	....
Olean Pet. Co., Fee 24	5	....
Forest Oil Corp., Fee 130	2	....
Fee 131	2	....
Fee 132	2	....
Fee 133	2	....
Forest Petroleum Corp., Fee 153	2	....
CLARION-VENANGO—		
R. & G. Foggan, Clark 40	3	....
Lamberton Nat. Bank, Boston 73	4	....
D. P. Weaver, Weaver 1	2	....
Fryburg Motor Co., Sporer 5	¶¼	....
CENTER-MIDDLE FIELD—		
Sunny Oil Co., Fee 2	3	....
BUTLER COUNTY—		
A. Affolter, Fee 20	2	....
M. B. Finnessy, McCullough 9	2	....
NEW YORK-PENN GAS FIELD—		
S. J. Brendel, Sheldon 1	*	....
G. K. Rodgers, Clair 1	¶2½	....

NEW YORK

Company, Well and Location	Initial Production Bbls.	Depth
ALLEGANY COUNTY—		
Minderter & Phillips, Warters 1	2	....
Forest Oil Corp., Fee 88	2	....
Fee 89	2	....
Mary Lippert, Lippert 29	2	....
Sawnett Oil Corp., Fee 8	12	....
Karl Weller Oil Corp., Karl 6	3	....

WEST VIRGINIA

Company, Well and Location	Initial Production Bbls.	Depth
CABELL COUNTY—		
J. W. Ramsey & Son, Taylor 1	¶¼	2978
KANAWHA COUNTY—		
Groscupp & Co., Bourdette 1	¶¼	4755
MINGO COUNTY—		
Virginian Gasoline & Oil Co., Closterman 25	10	1129
PLEASANTS COUNTY—		
Charles Kerr, Holdren 27	*	....
Albert Neeley & Co., Wagner 1	*	....
RITCHIE COUNTY—		
B. F. Finley & Co., Blackburn 1	*	....
Clem Morris & Co., Drake Hrs. 1	30	1700
TYLER COUNTY—		
Ohio Oil Co., Wilson 1	¶½	....

SOUTHEASTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
WASHINGTON COUNTY—		
R. J. Braden & Co., Miller 1	1	526

CENTRAL OHIO

Company, Well and Location	Initial Production Bbls.	Depth
ATHENS COUNTY—		
Ohio Fuel Gas Co., Campbell 1	¶¾	1050
BELMONT COUNTY—		
O. K. Oil & Gas Co., Brown 2	¶1¾	969
A. C. Peters & Co., Jefferies 2	¶¼	1659
Mason 1	¶¼	1964
Shay McMulan, Lucas 2	¶¼	1859
FAIRFIELD COUNTY—		
City Natural Gas Works, Ruff 5	¶¼	552
LORAIN COUNTY—		
C. J. Minor, Myers 1	¶½	2400
MUSKINGUM COUNTY—		
The Atha Co., Bryan 5	10	3159
MEDINA COUNTY—		
Oko Oil & Gas Co., Richards 8	5	480
PERRY COUNTY—		
Huntington Nat. Bank, Rogers Bros. 27	6	1172
STARK COUNTY—		
White & Co., Snyder 1	¶1	4397
East Ohio Gas Co., Hinkle 1	¶½	4391
Grant 1	¶¾	4414
VINTON COUNTY—		
Wittmer Oil & Gas Properties, Infirmary Land 1	*	2796

NORTHWESTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
SENECA COUNTY—		
Murphy & Sons, Bihn 3	2	1520
SANDUSKY COUNTY—		
W. G. Montgomery & Co., Miller 1	20	....

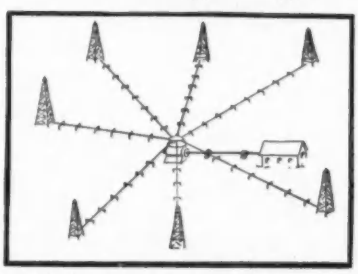
INDIANA

Company, Well and Location	Initial Production Bbls.	Depth
DAVIESS COUNTY—		
Harry Hanson & Co., Williams 1	*	830
Amsler & Gilmore, Smith 1	¶2	639
GIBSON COUNTY—		
Gem Oil Co., Gregory 1	¶¼	331
Nelson Bros., Maier 1	*	....
Wabash Public Service Corp., Allen 4	¶6¼	1484
Knox Engineering Corp., Gudgel 2	¶1¼	1492
HANCOCK COUNTY—		
Vernon Gas Co., Fort 1	¶¼	....
Caudill 1	¶¼	....
Bolander 1	¶¼	....
Bolander 2	¶¼	....
MONROE COUNTY—		
Pet. Exploration & Ohio Oil Co., Howard 1	*	740
PERRY COUNTY—		
Dr. C. C. Taliaferro, Jr., Peters 2	5	....
Peters 3	5	....
Peters 4	5	....
RUSH COUNTY—		
Indiana Gas Co., Mauzy 1	¶½	863
SULLIVAN COUNTY—		
Parker & Heinds, Johnson-Prather 1	*	643
SHELBY COUNTY—		
Stout & Overleese, Ensminger 1	¶¼	....

KENTUCKY

Company, Well and Location	Initial Production Bbls.	Depth
DAVIESS COUNTY—		
Ellis & Ashby, Haynes 1	10	....

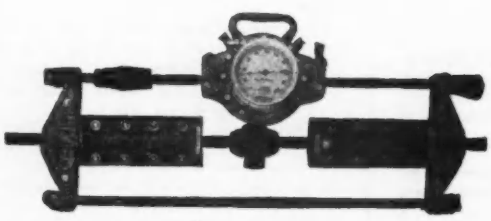
Solution of Your Pumping Troubles Depends on Definite Knowledge of Pumping Loads in Pounds



Every well in a group pumped from a central power can and should be properly balanced.

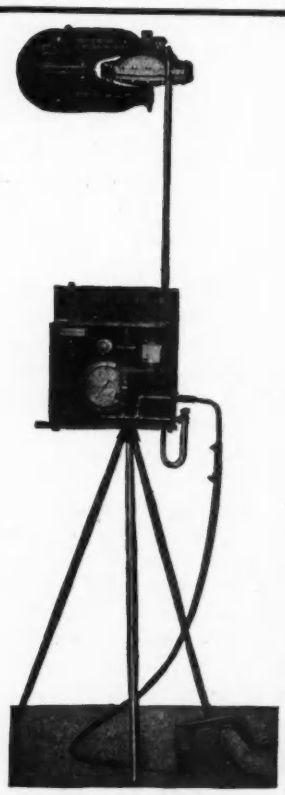
A few pounds overload can be the source of Pump and Equipment difficulties. The other extreme is extravagantly heavy equipment—in either case in order to get at the source of your troubles you must know the loads being handled. From this information is determined proper counter balance — most efficient pumping speed—correct length of stroke and answers to many other problems. Obtain this information by using the Martin-Decker Pump and Pull Rod Dynamometers.

Economize—Weigh Your Wells



The Martin-Decker Pull Rod Dynamometer for weighing wells pumped from central powers.

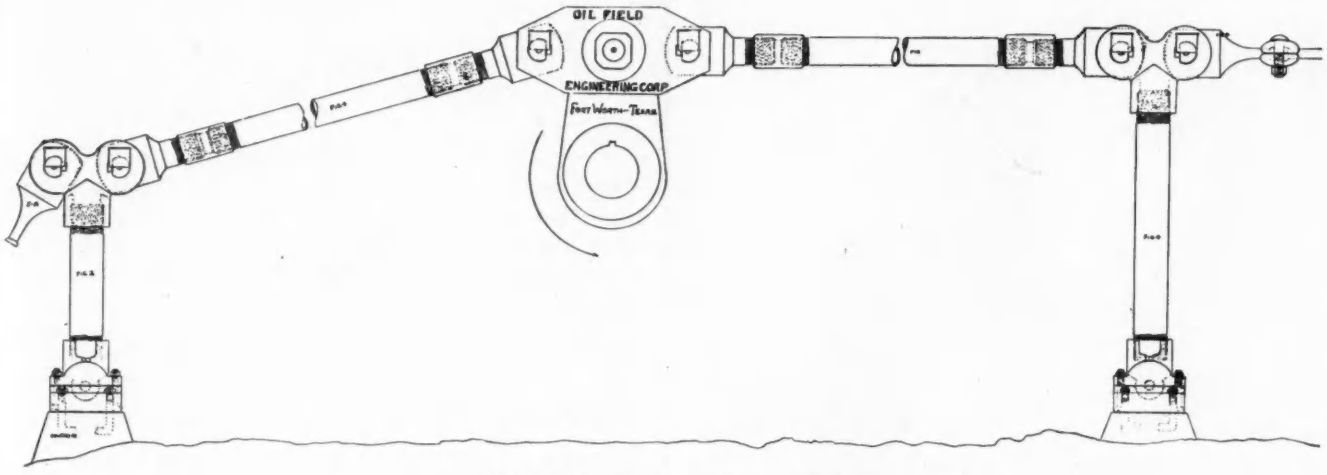
THE WEIGHT INDICATOR
MARTIN DECKER CORP.
LONG BEACH CALIFORNIA



The Martin-Decker Pump Dynamometer for weighing wells pumped with the Walking Beam.

New Equipment for the Field

MACHINERY • TOOLS CATALOGS • BOOKS



Oil Field Engineering Pumping Unit.

1. Pumping Unit

OIL FIELD ENGINEERING CORPORATION

Oil Field Engineering Corporation, Fort Worth, Texas, has developed the Ofeco Back Side Crank Pumping Unit designed to be of special value to line wells where a central power is not practical. One well, under this method, can be standardized and from two to four additional wells balanced, all on the Ofeco unit. Addition of these extra wells is figured, from field tests, to add little cost over that of the original well.

The Ofeco unit has a capacity of handling 4000-foot wells. Information on installations made and on the various applications possible will be furnished upon request.

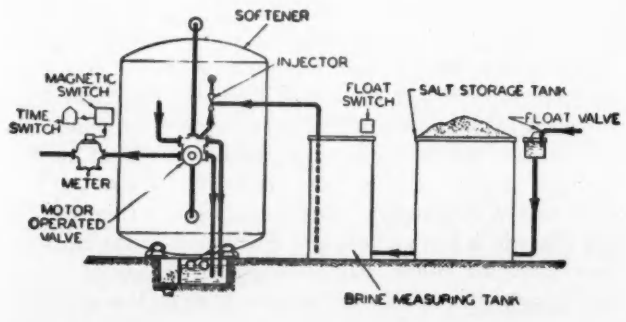
The unit is made entirely of steel. All moving parts are bronze bushed with tooled steel connection pins. All parts are oversized and ruggedly built to last the life of the well. Replacement pins and bushing may be quickly installed without shut-down of the wells.

The Ofeco Back Side Crank Pumping Unit incorporates the Ofeco Wilcox Wrist Pin in connection with its assembly.

2. Automatic Water Softener

THE PERMUTIT COMPANY

A new fully automatic industrial zeolite water softener is announced by the Permutit Company, 440 Fourth Avenue, New York. This softener, which will be shown during the New York Power Show, December 5 to 10, eliminates the errors due to the human element and conducts all of the operations of softening and regeneration with machine-like regularity and precision.



By a combination of a meter operated switch and electric controls with a motor driven Permutit single valve, each operation of the water softener is conducted under such precise control that the highest efficiency results. Briefly, at the end of the softening run, the meter actuates the electrical controls which carry through the steps of: Cutting the softener out of operation. Backwashing it for a regulated period so as to secure thorough cleansing. Admitting a carefully regulated amount of saturated salt brine so as to assure thorough regeneration without wastage of salt. Rinsing out the hardness salts to waste with the minimum amount of rinse water. And throwing the softener back into service thus placing it again under control of the meter, which governs the volume of water to be softened during the softening run and initiates the start of the next regenerating cycle.

Not only may the new models be had in the full automatic type, but it is also a relatively simple matter to apply the automatic control to existent downflow softeners, thus converting manual to fully automatic operation.

— — — — — — *MAIL COUPON* — — — — — —

THE OIL WEEKLY,
Houston, Texas, U. S. A.

Please see that I am supplied, without obligation, additional information on New Equipment Items Nos. ———— described in the November 28, 1932, issue of THE OIL WEEKLY.

Name .....

Company .....

Address .....

No Joint Too Big
No Job Too TOUGH

with
"VULCAN"
Back-Up Tongs

Genuine Williams "Vulcan" Back-Up Tongs are designed for severe service. They will handle any tool joint up to and including maximum sizes. Rotary drillers find them one of the most convenient tools to operate as well as the most dependable tongs in oil field service.

The short stubby handle is the proper length for rotary work. The Through-Bolt which fastens the Jaws is of extra size and is equipped with a U. S. Standard Nut. Each "Vulcan" chain is individually "proof-tested" on a standard tension machine to two-thirds of its breaking strain.

"Vulcan" Back-Up Tongs are available in two sizes, No. 115 and No. 115½. Capacity of each tool is 7¾ inches, but in construction, No. 115½ is slightly heavier and sturdier.

"Buy from Your Distributor"

J. H. WILLIAMS & CO.
"The Drop-Forging People"
75 Spring St., New York, N. Y.

***Western Warehouse and Sales Office*—Chicago**
***Works*—Buffalo, N. Y.**

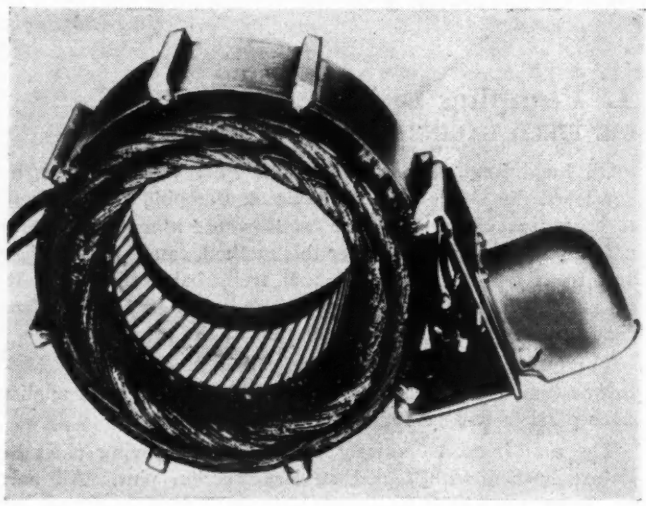
GENUINE WILLIAMS
SUPERIOR DROP-FORGED TOOLS
"VULCAN"
DROP-FORGED
BACK-UP TONGS

3. Motor

IDEAL ELECTRIC AND MANUFACTURING COMPANY

Ideal Electric and Manufacturing Company, Mansfield, Ohio, is introducing to the petroleum industry, the Noel Polyphase Capacitor Motor, for which the manufacturer claims the following outstanding features: unity power factor, two to five per cent better efficiency, and 15 to 25 per cent lower starting current, with the same starting torque as that of the standard induction motor. The motor operates at approximately 100 per cent power factor between loads of one-fourth to five-fourths full load. At lower loads it operates at leading power factor.

Design of the Noel Polyphase Capacitor Motor does not differ from that of the standard induction motor with the exception that a special winding is inserted in the bottom of the stator slots, which is permanently connected to a bank of static condensers. This winding acts as the secondary winding of a transformer. The stator winding is used as the primary winding of the transformer, the static condensers being permanently connected to the secondary winding. The ratio of the two windings is such that about 660 volts are applied to the capacitors, regardless of whether the motor is for 220, 440 or 2300 volts. This permits the use of standardized capacitors, which for this voltage are claimed to be extremely economical.



Showing Two Windings on Noel Motor.

The new motor is also built in 80 per cent leading power factor. To accomplish this the next size frame to that of standard is used together with larger capacitors, whereas the 100 per cent power factor machines are built into standard and NEMA frames. The starter used in connection with this type of motor is the same as that used with the standard induction motor.

The capacitors are of the oil filled, oil impregnated, hermetically sealed type with individual fuse protection. They are assembled in steel cases with conduit connections. These units can be installed in any convenient location. The Noel feature is applied to all classes of induction motors, including single squirrel cage, double squirrel cage, as well as wound rotor type machines, in sizes ranging from one horsepower to 200 horsepower and in all standard voltages, phases, and frequency. Bulletin 210, which gives a complete description of the Noel Polyphase Capacitor Motor, may be secured from any of the company branch offices or from the main office at Mansfield, Ohio.

Squeaks *from the* BULL WHEEL

The golfer nonchalantly stepped up to the tee and swung one of those carelessly careful drives.

The ball sailed straight down the fairway, leaped gaily across the green, and dived into the hole like a prairie dog.

"What have you suddenly gone crazy about?" inquired the golfer's wife, who was trying to learn something about the game.

"Why, I've just made a hole in one," yelled the golfer, as he essayed a double handspring with a wild gleam of delight in his eyes.

"Did you?" sweetly said the little woman. "Please do it again, dear, I didn't see you."

Despairing Employer (engaging fourth typist within a month): "Can you punctuate?"

Typist (brightly): "Oh, yes. I'm always early in the morning."

An old black man who had spent many years in a wheel chair wanted to go on one last coon hunt before he died. So he and his grandchildren, accompanied by several dogs, started out.

Hardly had they penetrated the swamp when they met a bear. All turned tail and ran, leaving poor grandpap to his fate.

As they came panting into the yard they called: "Oh, mammy, mammy, grandpap done got et up by a b'ar."

"Foolishment what yo' speaks, chillen. Yo' grandpap done come in five minutes ago wid de dogs!"

Henderson—Why are you in the air force now? I thought you were in the cavalry.

Peterson—I got transferred.

Henderson—Why was that?

Peterson — Well, after an airplane throws you out, it doesn't generally walk over and bite you.

"Why didn't you tell me I had a dab of rouge on the tip of my nose?"

"How should a man know how you girls want to wear your complexion?"

Lawyer: "It would be better if you could prove an alibi. Did anybody see you at the time of the crime?"

Client: "Fortunately, no."

"My sister is engaged to widower with four children who plays the violin. Can you imagine anything worse?"

"Yes, six children and a trumpet."

Actor (rather a bore)—Ah, my boy, when I played Hamlet the audience took 20 minutes to leave the theatre.

Fellow Clubman (rather bored)—Was he lame or something?

It was a lovely morning. The train stopped at a village station, and an enthusiastic tourist leaned out of the car window.

"Isn't this exhilarating?" he exclaimed as he rubbed his hands.

"No, it ain't," replied a passing porter, "it's Jonesville."

First Fly: "Why are you making so much noise?"

Second Fly: "Whoopee! I passed the screen test."

"How many fish was it that you said you caught Saturday, Ernest?"

"There were six of them, dear. Don't you remember?"

"Yes, that was what I thought you said, but that fish market has made a mistake again. They've charged us for eight."

The Boss (who had just dropped in an the football game): "So this is your uncle's funeral, Bob?"

Office Boy (with great presence of mind): "Looks like it, sir. He's the referee."

Small Bobby was traveling in a Pullman sleeper for the first time. He awoke during the night.

"Do you know where you are, Bobby?" asked his mother.

"Sure. I'm in the top drawer, ain't I mom?" answered Bobby.

"An awful lot of girls are stuck on me."

"Yes; they must be an awful lot."

An Easterner stood on the veranda of a little western hotel and watched the sun go down.

"By George," he exclaimed to the native sitting nearby, "that's certainly a gorgeous sunset, isn't it?"

"Not bad," was the answer. "Not bad for a little place like Hoopville."

Dolly was just home after her first day at school. "Well, darling," asked her mother, "what did they teach you?"

"Not much," replied the child. "I've got to go again."

ONLY ...a WOVEN brake block permits semi-automatic drilling feed!

YOU will be interested in our new booklet explaining how STANDCO is used to produce an even creeping feed which maintains any desired weight on the bit, and insures **straight** hole.

Send for this booklet today and learn why STANDCO is being rapidly adopted by major operators who figure braking costs on a "ton-mile" basis.

It wears — and wears — and wears.

Made in ALL Standard Sizes

DISTRIBUTORS NOTE! .A few protected territories open. Write or wire for details.

STANDARD BRAKE LINING COMPANY

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LOS ANGELES, CALIFORNIA

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Standco NO-SMOKE ASBESTOS Brake Lining

NEWS *from the* *Industry's* EQUIPMENT MAKERS

Dewey Engineer Moves to Dallas

Kent B. Diehl, field engineer, with Dewey Portland Cement Company of Texas, is now located in Dallas. In addition to selling Dewey Portland Cement, Mr. Diehl will also promote the sale of Dewey's two special products—Dewey Masons Cement, a bricklayer's cement, and Dewey Super Cement, a rapid-hardening waterproof cement especially suitable for oil well cementing.

Westinghouse Names Two Vice Presidents

Westinghouse Electric & Manufacturing Company announces the election of two vice-presidents: C. E. Stephens, formerly commercial vice-president, who will remain in New York, and N. G. Symonds, formerly commercial vice-president at Chicago, whose headquarters will be at the general offices of the company in East Pittsburgh, Pennsylvania.

Bulletin Discusses Magnetometer System

American Institute of Mining and Metallurgical Engineers has recently published "Theory and Experiments Concerning a New Compensated Magnetometer System," a new publication of Professor Heiland and Mr. Pugh of Golden and Denver, Colorado, respectively. This publication is obtainable from the A.I.M.M.E. as Technical Publication No. 483.

Adams Announces One Man Jack

Adams Manufacturing & Engineering Company, 1317 North Bronson Avenue, Los Angeles, California, announces availability of a bulletin describing a "one-man" pipe lifting jack built to handle pipe ranging in diameter from two inches to 16 inches.

Beebe Brothers Name Canadian Representative

Beebe Brothers, Seattle, Washington, manufacturers of an all steel hand hoist, have licensed its manufacture in Canada under Canadian patents to the London Concrete Machinery Company, Ltd., of London, Ontario, Canada.

Report On Oil Accidents in California

The United States Bureau of Mines, Department of Commerce, Washington, D. C., has issued its "Report of Investigations Number 3182," dated October, 1932, which is a "Review of Fatalities in the California Petroleum Industry during the calendar year 1931." The report was prepared by R. L. Marek, associate petroleum engineer for the Bureau of Mines at its San Francisco office, and it consists of 22 single-spaced mimeographed pages.

Marshall, Texas.—Ryan Consolidated Petroleum Corporation which recently encountered 15 feet of rotten porous lime at 5124-39 feet, believed to be oolitic of the Glen Rose, and then cemented seven-inch OD casing at 5075 feet, tested salt water at 5147 feet, and is arranging to core deeper. Elevation is 369 feet.

K. T. Penick, secretary-treasurer, Oil Center Tool Company, Houston, back from a hunt near Fredericksburg, Texas, in which the eight-point buck took second place. The turkey was the "pelon."

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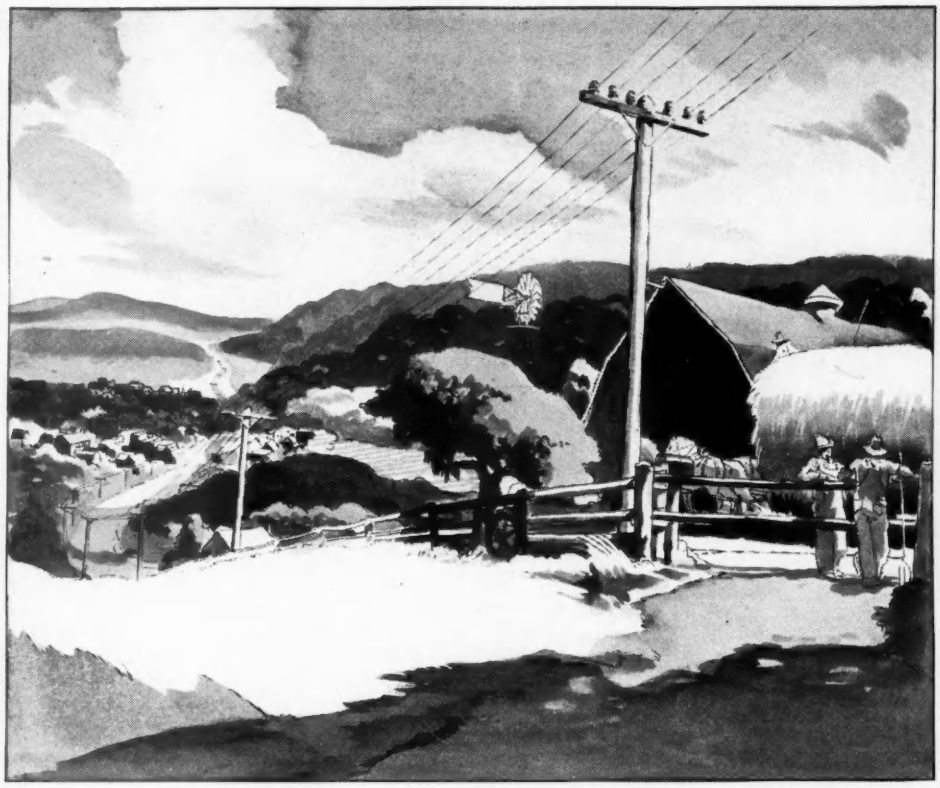

ORGANIZED RESPONSIBILITY

Thanks to the miracle of the telephone, the smallest town is now but a few moments' away from the most distant metropolitan center. . . . . Unified control makes available to every community, in good times and poor, a single high standard of efficiency. . . . . The same principles hold true in oil well cementing. Only by winning and holding its dominant leadership could Halliburton make available to the industry the improvements developed, at a cost of hundreds of thousands of dollars, through its intensive field and laboratory research. Only under such conditions could Halliburton offer to the operators in quiet fields the same high standards of service as it gives to those in boom fields. Through such *organized responsibility* the industry is sure at all times of the scientific efficiency so essential to the life and productivity of its properties.

HALLIBURTON

OIL WELL CEMENTING CO.

Duncan, Oklahoma

CONTROL

IS AS VITAL TO A FLOWING WELL AS IT IS TO A HORSEMAN

OBTAIN IT WITH THE GUIBERSON Control Head Packer

What chance has a "wild" horse to finish "in the pay"? His speed and strength are dissipated in uncontrolled spurts and dashes, breaking the stride and using up his energy. A well that is allowed to flow haphazardly through the casing runs the same sort of disappointing race and is often a false asset to the owner.

The Guiberson Control Head Packer confines the flow to the tubing, utilizing the gas pressure most effectively to lift the oil and prolonging the time when pumping becomes necessary. By maintaining the surface pressure in the well, the gravity of the oil is also preserved.

In your race for profits, insure a winning "stride" for your wells with the Guiberson Control Head Packer.

TO PACK FLOWING WELLS

The Guiberson Tubing Oil Saver, set on top of the casing, confines the flow while the Packer is being run. Recommended for safety and economy. Rubbers permit passage of tubing collars, and Saver can be opened wide to admit Packer or Tubing Catcher.

"Better Be Safe Than Sorry"

The GUIBERSON CORPORATION

Box 1106, Dallas, Texas

California Branch: 1304 Security Title Insurance Bldg., Los Angeles

504 Wright Bldg., Tulsa

First and Locust Sts., Newark, O.

GUIBERSON

BETTER BE SAFE THAN SORRY